PATENT ABSTRACTS OF JAPAN

(11)Publication number : **2002-207807**

(43)Date of publication of application : **26.07.2002**

(51)Int.Cl. G06F 17/60

B41J 2/175

B41J 29/00

B41J 29/38

G06F 3/12

G06K 19/10

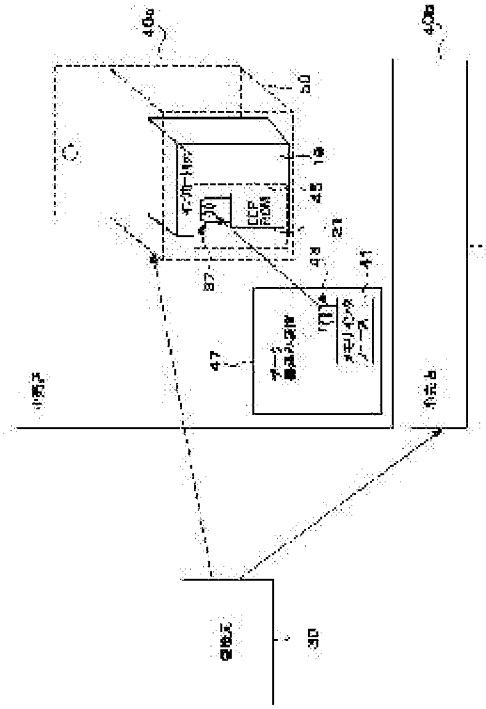
(21)Application number : **2001-271525** (71)Applicant : **SEIKO EPSON CORP**

(22)Date of filing : **07.09.2001** (72)Inventor : **NAKA TAKAHIRO**

(30)Priority

Priority number : **2000283456** Priority date : **19.09.2000** Priority country : **JP**

(54) SEPARATELY SOLD PARTS OF EQUIPMENT, EQUIPMENT HAVING SEPARATELY SOLD PARTS, ACCESS DEVICE, METHOD FOR DISTRIBUTING SEPARATELY SOLD PARTS, AND INK CARTRIDGE



(57)Abstract:
PROBLEM TO BE SOLVED: To apply required customization to a storage device for separately sold parts on the way of a distribution route of separately sold parts from a manufacturer to each consumer.
SOLUTION: Ink cartridge 19 loads a cartridge EEPROM 21 allowed to be accessed in a non-contact state, and a package 50 of the ink cartridge 19 is provided with a transparent window 45. A data writer 47 provided with a memory interface 41 and a coil 43 for writing data in the EEPROM 21 is installed in each of retail stores 40a, 40b, etc. When a consumer purchases the ink cartridge 19, purchase data or the like are written in the EEPROM 21 through the window 45. When the cartridge 19 is fitted, a printer 5 reads the data from the EEPROM 21, and when there is no purchase data, the printer is not operated.

LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

CLAIMS

[Claim(s)]
[Claim 1] The option components of the device which has accessible storage by non-contact in a distribution channel until it crosses to a consumer's hand for storing the control information needed in order that said device may carry out predetermined actuation in the condition of having equipped with said option component, in the option components of the device by which an option is carried out to the body of a device.
[Claim 2] storing said control information -- (1) -- storing said control information in said storage with which said control information is not stored -- (2) Said mistaken control information is changed into right control information to said storage with which the mistaken control information is stored, (3) -- the option component according to claim 1 which it is in eliminating said prohibition information of operation from said storage with which the prohibition information of operation for forbidding carrying out said predetermined actuation to said device is stored, and ********. [or]
[Claim 3] Said control information is an option component according to claim 1 stored when it purchases justly at a retail store.
[Claim 4] The option component according to claim 1 constituted so that said control information can be stored in said storage by accessing said storage by non-contact from from outside the package which contained said option component.
[Claim 5] The body of a device and said body of a device are equipped with the option components by which an option is carried out. Said option component Since the control information needed in order that said device may carry out predetermined actuation in the condition of having equipped with said option component is stored, It is the device by which said body of a device carries out said predetermined actuation only when said control information is stored in said storage when it has [from] accessible storage by non-contact outside a package and said body of a device is equipped with said option component.
[Claim 6] Equipment which accesses the accessible storage with which the option components of the device by which an option is carried out to the body of a device were equipped according to non-contact by non-contact, and accesses the storage of the option components which are equipped with a means to store in the storage of said option component the control information needed in order that said device may carry out actuation predetermined in the condition of having equipped with said option component, and are installed by the distribution industry company of said option component.
[Claim 7] Equipment according to claim 6 which accesses said storage from from outside the package which contained said option component.

[Claim 8] The circulation approach of option components of having the step which stores in the storage of said option component the control information needed in order that said device may consider actuation predetermined in the condition of having equipped with said option component, by non-contact in a distribution channel after the option components of the device by which an option is carried out to the body of a device are manufactured until it crosses to a consumer's hand as the step which accesses the accessible storage with which said option component was equipped according to non-contact.
[Claim 9] storing said control information -- (1) -- storing said control information in said storage with which said control information is not stored -- (2) Said mistaken control information is changed into right control information to said storage with which the mistaken control information is stored, (3) -- Michikata Nagare of the option component according to claim 8 which it is in eliminating said prohibition information of operation from said storage with which the prohibition information of operation for forbidding carrying out said predetermined actuation to said device is stored, and ******** -- law. [or]
[Claim 10] The option components of the device which has the storage which can write in from the exterior the control information needed in order that said device may carry out predetermined actuation in the condition of having equipped with said option component, in the option components of the device by which an option is carried out to the body of a device after reduced pressure packing of said option component has been carried out by packaging.
[Claim 11] said control information -- (1) -- the information which identifies the model of said device, and (2) -- the information which shows the drive conditions of said device, and (3) -- the information which shows the operating condition at the time of the maintenance of said device, or (4) -- the information which identifies those who sell the option components concerned, and the option component according to claim 10 which it is in ********.
[Claim 12] The option component according to claim 10 which can write further the PD information needed in the PD process of said option component from the exterior in said storage.
[Claim 13] Said storage is an option component according to claim 12 currently divided into the field where information is written in by the manufacturer of said option component, the field where information is written in in a circulation process, and the field to which information is written in by said device.
[Claim 14] The ink cartridge currently packed up with the condition that said store can be written, in the ink cartridge which has the container which held ink, and the store which can be written by non-contact when said cartridge is intact.
[Claim 15] Said package is an ink cartridge according to claim 14 which is vacuum packaging.
[Claim 16] Said package is an ink cartridge according to claim 14 which is a sealing package.
[Claim 17] The ink cartridge according to claim 14 said whose ink is ink by which degassing was carried out.
[Claim 18] Said ink cartridge is an ink cartridge given in claim 14 written which has the 1st field for memorizing control information required performing actuation it being used

equipping a recording device and predetermined [storage / said] in said recording device, and the 2nd field for memorizing the information about the amount of ink held in the ink cartridge concerned.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the components, article of consumption, or accessory (on these specifications, these are named generically and it is only called the "components") for the devices by which the option of devices, such as a personal computer and a printer, and the body of the device is carried out.
[0002]
[Description of the Prior Art] A printer is taken for an example and explained below.
[0003] It is equipping with optional components (for example, a roll sheet, an ink cartridge, etc.), and a printer will be in an usable condition for the first time at the body of a printer. Since many of these option components are articles of consumption, a user needs to go to a retail store and sometimes needs to purchase option components.
[0004] In the case of the ink cartridge etc., semiconductor memory is attached in this and what the semiconductor memory is made to memorize various control information for ink use, and the body of a printer reads it into it, and is used for control is known. The semiconductor memory prepared in this conventional ink cartridge is the memory of a contact process which can be accessed now because have a metal terminal on a front face and terminals, such as a body, contact there.
[0005]
[Problem(s) to be Solved by the Invention] By the way, since carrying is the thing of the small size which can be contained [that it is easy and] in a bag etc., many of option components of devices including an ink cartridge may be set as the object of a shoplifter at a retail store. In order to prevent it, at some retail stores, the card which displays option components to the place which a consumer's hand does not reach, or displayed the trade name on it for every option components was prepared, it was put in order, and the measure of shoplifter prevention, such as passing the actual thing in exchange for the card, is taken. However, for a retail store, a burden is placed by taking the measure of such shoplifter prevention, it is troublesome, and for a consumer, since can take the actual thing in its hand and it cannot be easily seen before purchase, it is inconvenient.
[0006] Moreover, there is a request that the distribution industry company who wholesales not a manufacturer but it for the data stored in the semiconductor memory of option components, or sells at retail wants to customize a request. For example, at each retail store, while giving profits and convenience to the consumer who purchased it by writing in the information for offering service original with the memory of option components in the case of sale, there is a case where he wants to advertize the description of the retail store etc. Moreover, by the manufacturer of option components, when manufacturing by the same hardware configuration, wholesaling it or selling all the option components two or more models and for two or more destination, there is a case where he wants to write the control information of the contents for which it was suitable

for every model and every destination in memory, and to sell it. However, on a distribution channel, since components are already stored in the package, it is already impossible to access memory and, therefore, it cannot be satisfied with option components with the memory of the conventional contact process of the above-mentioned request.

[0007] Therefore, the purpose of this invention is to carry out shoplifter prevention of option components so that it may not become troublesome for a retail store and may not become inconvenient to a consumer.

[0008] Moreover, another purpose of this invention is to enable it to customize a request to the storage of option components on the distribution channel crossed to a consumer's hand, after being manufactured.

[0009]

[Means for Solving the Problem] the option components of the device according to the 1st side face of this invention have accessible (using radio signals, such as an electric wave, light, or a supersonic wave) storage by non-contact from outside the package of option components or -- in a distribution channel until it crosses to a consumer's hand for storing the control information needed in order that a device may carry out predetermined actuation in the condition of having equipped with option components. storing control information here -- (1) -- storing said control information in said storage with which said control information is not stored -- [for example,] (2) Said mistaken control information is changed into right control information to said storage with which the mistaken control information is stored, (3) -- it is either of eliminating said prohibition information of operation from said storage with which the prohibition information of operation for forbidding carrying out said predetermined actuation to said device is stored. [or] The device by which it was equipped with option components is made not to carry out the above-mentioned predetermined actuation, if control information is not stored in the storage of the option component. The store of option components can be accessed [from] outside the package of this option component.

[0010] Since it is possible to store control information in storage by non-contact according to this invention, when option components are purchased, control information can be stored in the storage of the option component from from outside a package at a retail store. For this reason, since control information is not stored in the shoplifted option components, even if it equips a device with the shoplifted option components, that device does not operate. Therefore, the shoplifter of option components can be prevented.

[0011] Moreover, since it is possible to store control information in storage by non-contact, a request is customizable to the storage of option components on a distribution channel. For example, when manufacturing all the option components two or more models and for two or more destination by the same hardware configuration and wholesaling or selling it, outside a package, from from, the manufacturer of option components can write the control information of the contents for which it was suitable for every model and every destination in storage, and can sell it.

[0012] As for the body of a device, and its body of a device, the device according to the 2nd side face of this invention is equipped with the option components by which an option is carried out. Option components have [from] accessible storage by non-contact outside the package for storing the control information needed in order that a device may carry out predetermined actuation in the condition of having equipped with the option

component. The body of a device carries out predetermined actuation, only when are equipped with the option component, and control information is stored in the storage of the option component.
[0013] The equipment which accesses the storage of the option components according to the 3rd side face of this invention is installed by the distribution industry company of option components, accesses the accessible storage with which the option components of the device by which an option is carried out to the body of a device were equipped according to non-contact by non-contact, and is equipped with a means store in the storage of the option component the control information needed in order that a device may carry out actuation predetermined in the condition equipped with option components.
[0014] Michikata Nagare of option components according to the 4th side face of this invention -- law has the step which stores in the above-mentioned storage the control information needed in order that a device may consider actuation predetermined in the condition of having equipped with option components as the step which accesses the accessible storage with which the option component was equipped in the distribution channel after option components are manufactured until it crosses to a consumer's hand according to non-contact by non-contact.
[0015]
[Embodiment of the Invention] This invention is applicable to the components of all devices. The operation gestalt when applying this invention to the ink cartridge with which the ink jet printer which is a recording apparatus is equipped exchangeable hereafter using a drawing is explained.
[0016] Drawing 1 shows an example of the ink cartridge concerning the first operation gestalt of this invention, and its distribution channel.
[0017] It has the case which stored the ink hold machine which is not illustrated, the storage 21 of a non-volatile, for example, EEPROM, (the following, Cartridge EEPROM), and the coil 37 for accessing a cartridge EEPROM 21 by non-contact by electromagnetic induction are carried in the manufacturer 30, and the ink cartridge 19 concerning this operation gestalt is contained by the predetermined package 50 (the coil 37 is exposed to a cartridge EEPROM 21 accessible at the outside surface of an ink cartridge 19). And the ink cartridge 19 is shipped to the various retail stores 40a and 40b, such as a department store and an electrical appliances store, and -- from the manufacturer 30. In addition, in the manufacturer 30, the date of manufacture of the Cartridge ID (for example, manufacture serial number) and the ink cartridge 19 which memorized the information relevant to an ink cartridge 19, for example, the class of ink cartridge 19 etc., and the ink property information in an ink cartridge 19 (a class, color, etc.) are written in EEPROM21 of an ink cartridge 19.
[0018] Here, degassing of the ink held in the ink cartridge 19 is carried out. Degassing means the condition of having removed the air (nitrogen, oxygen, etc.) which has melted into ink. It is hard coming to generate air bubbles in ink by carrying out like this. If the air bubbles generated in ink go into the passage of an ink jet recording head etc., it may have big effect on an ink regurgitation property. In the method which the volume of the nozzle which carries out the regurgitation of the ink especially, and a pressure room open for free passage is changed, and carries out the regurgitation of the ink, for example, the method using a piezoelectric device, since the pressure generated by volume change will

be absorbed with air bubbles, the event in which ink is not breathed out may also be generated.
[0019] A package 50 is a product made of paper, even if an ink cartridge 19 is contained by the package 50, through a package 50, through the coil 37 of an ink cartridge 19, can access a cartridge EEPROM 21 and can carry out data readout and writing. Through the transparence aperture 45 of a package 50, in the case of an optical R/W method, a cartridge 19 can be accessed, and it can carry out data readout and writing.
[0020] The data write-in equipment 47 which writes predetermined data in EEPROM21 of an ink cartridge 19 is formed in each retail stores 40a and 40b and --. Data write-in equipment 47 has the coil 43 for accessing a cartridge EEPROM 21 by non-contact by electromagnetic induction, and the memory interface 41 for writing data in a cartridge EEPROM 21. At the time of predetermined, for example, when a consumer purchases an ink cartridge 19 justly, through the transparence aperture 45 of the package 50 of an ink cartridge 19, predetermined data are written in a cartridge EEPROM 21, or the memory interface 41 is used [**** / supplying power] as a cartridge EEPROM 21 by actuation of the employee of a retail store. There are service provision data (for example, confidential information which only the consumer who purchased at the retail store can know (URL of the Web page for receiving specific service etc.)) for providing a consumer with the purchased data in which the purport which purchased the ink cartridge 19 is shown as data to write in, and original service etc.
[0021] In the print system mentioned later, it operates based on the manufacturer 30 and retail stores 40a and 40b, and the data written in the cartridge EEPROM 21 in --.
[0022] Drawing 2 is the block diagram showing the overall configuration of the print system concerning the first operation gestalt of this invention.
[0023] In this drawing, host equipment 1 is connected with the ink jet printer (henceforth a printer) 5 through the printer interface circuit 3. This host equipment 1 is the computer of a general-purpose mold typically like a personal computer, and has the printer driver 7 which is the software which performs creation processing of the print data which should be sent to a printer 5.
[0024] It connects with host equipment 1 through the host interface circuit 13, and is equipped with a printer 5 free [attachment and detachment of an ink cartridge 19]. The printer 5 has the memory interface 31, the printing processing circuit 15, and the print station 20.
[0025] The memory interface 31 has the coil 35, using this coil 35 and the coil 37 of a cartridge EEPROM 21, under the control of the printing processing circuit 15 by electromagnetic induction, supply power to a cartridge EEPROM 21, or reads the data currently recorded by the cartridge EEPROM 21, or writes data in a cartridge EEPROM 21. As data to write in, they are the opening date (that is, date which uses an ink cartridge 19 for the first time) of an ink cartridge 19, a current ink residue, etc.
[0026] The printing processing circuit 15 performs creation, a vertical format unit, etc. of a printing image based on the print data transmitted through the host interface circuit 13 from host equipment 1. Although the printing processing circuit 15 is not illustrated, it is equipped with a print head drive circuit, the motorised circuit, the data write-in circuit to an ink cartridge 19, the I/O circuit of external data, CPU that controls the printing processing circuit 15 whole. Moreover, the printing processing circuit 15 is equipped with the storage 17 of the non-volatile for saving specific data, for example, EEPROM,

(the following, Printer EEPROM). Although the printing processing circuit 15 is mentioned later for details, it controls the memory interface 31 and controls actuation of a printer 5, and use of an ink cartridge 19 for the data currently written in the cartridge EEPROM 21 based on read-out and it.

[0027] A print station 20 is printed under control of the printing image which the printing processing circuit 15 created of the printing processing circuit 15. Although the print station 20 is not illustrated, it consists of the print head, carriage, paper feed equipment, head maintenance equipment, etc., and is equipped with the exchangeable ink cartridge 19 for supplying ink to the print head free [attachment and detachment].

[0028] If a printer 5 is completely equipped with an ink cartridge 19, the coil 37 of a cartridge EEPROM 21 and the coil 35 of the memory interface 31 of a printer 5 can combine it electrically. If it does so, it will enable the printing processing circuit 15, to write data in a cartridge EEPROM 21, or to carry out through the memory interface 31. [reading data from a cartridge EEPROM 21]

[0029] Although there are generally an on-carriage type carried with the print head on carriage and an off carriage type set to the immovable location distant from carriage as type of an ink cartridge, the ink cartridge 19 of this operation gestalt may be which type. Moreover, an ink cartridge 19 can also be used for two or more printers about as it equips a certain printer, and it removes and another printer is re-equipped, after [a certain] using a grade.

[0030] Hereafter, the flow of the processing which the printing processing circuit 15 in an above-mentioned print system performs is explained.

[0031] Drawing 3 shows the flow of processing of the printing processing circuit 15 performed at the time of wearing of an ink cartridge 19.

[0032] When equipped with an ink cartridge 19, or when the turn-on of the power source of a printer 5 is carried out, the printing processing circuit 15 reads the data currently recorded on the cartridge EEPROM 21 (step S1), and checks the existence of purchased data (S2). In this check, if there are purchased data (it is Yes at S2) Predetermined processing of filling up the print head with the ink in an ink cartridge 19 is started (S3). the message (since there is no record of the purchased purport, printing processing cannot be started! please ask the purchased retail store. for example, -- "--) of the purport which does not carry out printing activation without purchased data (it is No at S2) ") is displayed on the display of host equipment 1, and it is made not to print using an ink cartridge 19 (S4).

[0033] After checking that there are purchased data, the printing processing circuit 15 performs predetermined processing for service provision data from a cartridge EEPROM 21 based on read-out and its data to predetermined timing. For example, in being URL of the Web page which only the consumer whom the read service provision data purchased at the retail store can know, it displays a screen as shown in drawing 4 on the display of host equipment 1. A consumer can receive information and service original with a retail store, if the URL is accessed.

[0034] The above is explanation of this operation gestalt. In addition, data write-in equipment 47 and a printer 5, and the data communication (that is, read-out and writing of data to a cartridge EEPROM 21) with a cartridge EEPROM 21 are possible not only by non-contact but the various methods (for example, optical communication using a light emitting device and a photo detector) of having used electromagnetic induction.

[0035] According to the operation gestalt mentioned above, in each retail stores 40a and 40b and --, when an ink cartridge 19 is purchased justly, a cartridge EEPROM 21 can be accessed by non-contact from from outside a package 50, and the purchased data of an ink cartridge 19 can be written in. The printer 5 by which it was equipped with the ink cartridge 19 does not perform printing processing which used the ink cartridge 19, if purchased data are not recorded on a cartridge EEPRM21. Since purchased data are not recorded on the shoplifted ink cartridge 19 by this even if it shoplifts and uses an ink cartridge 19, a printer 5 does not operate. That is, since the shoplifted ink cartridge 19 cannot be used, shoplifter prevention of an ink cartridge 19 can be aimed at.
[0036] moreover, according to the operation gestalt mentioned above, after an ink cartridge 19 is manufactured, a request is customizable to a cartridge EEPROM 21 on a distribution channel until it crosses to the hand boiled a consumption person. For example, in each retail stores 40a and 40b and --, original service provision data can be written in a cartridge EEPROM 21. Thereby, retail stores 40a and 40b and -- can advertize the retail stores 40a and 40b, the description of --, etc. while giving profits and convenience to the retail stores 40a and 40b and the consumer who purchased the ink cartridge 19 by --. Moreover, when manufacturing all the ink cartridges two or more models and for two or more destination by the same hardware configuration and wholesaling or selling it, the manufacturer of an ink cartridge 19 can write the information on the contents that it was suitable for every model and every destination in Cartridge EEPROM, and can sell it.
[0037] Next, the second operation gestalt of this invention is explained. This operation gestalt explains focusing on a different point from the first operation gestalt. With this operation gestalt, while circulating from the manufacturer of an ink cartridge to a retail store, various information is written in a cartridge EEPROM 21, and the case where a print system uses it is shown. Especially this operation gestalt is suitable when those who manufacture an ink cartridge differ from those who sell. For example, it is the case where manufacture in the case of the so-called OEM which a manufacturer supplies to other manufacturers and the manufacturer who received supply sells by its own brand, or a certain country, and the affiliated company of other countries sells it etc. Here, it explains taking the case of the case of OEM, or the case where the affiliated company of two or more overseas sells, respectively.
[0038] Drawing 6 shows the example of the ink cartridge concerning the second operation gestalt of this invention, and the distribution channel through the affiliated company (or OEM supply place) of OEM or an overseas.
[0039] With this operation gestalt, since it is a pollution control when ink begins to leak from an ink cartridge by antiflashing of the ink held in the interior, a unforeseen accident, etc., an ink cartridge 19 seals and is packed. Moreover, when degassing of the ink held in the interior is carried out, before starting use, reduced pressure packing of the air is carried out at the ink in an ink cartridge so that whenever [penetration and degassing] may not fall. Reduced pressure packing of an ink cartridge is explained using drawing 7 . The bag 60 formed as packaging used for this packing with the film of the property which intercepts air is used. As shown in drawing 7 (a), an ink cartridge 19 is held in this bag 60. From opening 60a, the air in a bag 60 is sucked out, in the condition of having decompressed, opening 60a is closed by thermocompression bonding etc. and reduced pressure packing is carried out. After closing opening 60a, as shown in drawing 7 (b),

remainder 60b may also fold up.
[0040] The cartridge EEPROM 21 is accessible non-contact [the exterior to] as well as the 1st operation gestalt. That is, reading and an ink cartridge can write various information from the exterior to a cartridge EEPROM 21, where reduced pressure packing is carried out. When a cartridge EEPROM 21 is an optical R/W method, as shown in drawing 8 , to prepare transparence aperture 60c in a bag 60, to access a cartridge 19 through this transparence aperture 60c, and what is necessary is just made to carry out data readout and writing.
[0041] They are the control condition of cleaning of the printer head which are the model ID which is information for present ** ID which is the information for identifying each affiliated company, and an ink cartridge 19 to identify the model of usable printer as information written in a cartridge EEPROM 21 here, for example, and an operating condition at the time of a maintenance, or the drive conditions of a printer head. The control condition at the time of cleaning of a printer head is the amount of ink attracted in cleaning, or an interval in the case of performing automatic cleaning periodically. The drive conditions of a printer head are the amounts of ink which carry out the regurgitation, when printing 1 dot. A cleaning control condition or the drive conditions of a head can be defined according to the climates (for example, the averages, such as atmospheric temperature, humidity, and rainfall, a peak price, or the minimum value etc.) of the country to which an ink cartridge 19 is sold, or an area.
[0042] Moreover, the supply place ID which is the information for identifying the firm of the partner who supplies as OEM etc. in the case of OEM is written in a cartridge EEPROM 21.
[0043] Based on the data written in the cartridge EEPROM 21, the print system shown in drawing 2 operates like the 1st operation gestalt. This operation gestalt uses and explains drawing 9 - drawing 12 according to the data in which the flow of the processing which the printing processing circuit 15 performs was written by the cartridge EEPROM 21.
[0044] Drawing 9 is the example of procedure in case the model ID of printer is written in the cartridge EEPROM 21. At this time, the model ID of printer 5 is beforehand memorized by the printer EEPROM 17.
[0045] The printing processing circuit 15 reads the data currently recorded on the cartridge EEPROM 21, when equipped with an ink cartridge 19, or when the turn-on of the power source of a printer 5 is carried out (S11). It is confirmed whether the printing processing circuit 15 is in agreement with the model ID which read the model ID of printer 5 beforehand memorized by the printer EEPROM 17, and was read from the cartridge EEPROM 21 (S12). In this check, if Model ID is in agreement (it is Yes at S12) the message (this ink cartridge cannot be used by this type of printer. for example, -- "--) of the purport which starts predetermined processing of filling up the print head with the ink in an ink cartridge 19 (S13), and does not carry out printing activation if not in agreement (it is No at S12) ") is displayed on the display of host equipment 1, and it is made not to print using an ink cartridge 19 (S14). It can avoid using an ink cartridge by this by printers other than the model which was able to be defined beforehand.
[0046] Drawing 10 is the example of procedure in case the supply place ID of OEM (or present ** ID) is written in the cartridge EEPROM 21. At this time, the corresponding supply place ID (or present ** ID) is beforehand remembered to be a printer 5 by the printer EEPROM 17.

[0047] The printing processing circuit 15 reads the data currently recorded on the cartridge EEPROM 21, when equipped with an ink cartridge 19, or when the turn-on of the power source of a printer 5 is carried out (S21). It is confirmed whether the printing processing circuit 15 is in agreement with the supply place ID (or present ** ID) which read the supply place ID (or present ** ID) memorized beforehand to the printer EEPROM 17, and was read from the cartridge EEPROM 21 (S12). In this check, if the supply place ID (or present ** ID) is in agreement (it is Yes at S22) the message (this ink cartridge cannot be used by this type of printer. for example, -- "--) of the purport which starts predetermined processing of filling up the print head with the ink in an ink cartridge 19 (S23), and does not carry out printing activation if not in agreement (it is No at S22) ") is displayed on the display of host equipment 1, and it is made not to print using an ink cartridge 19 (S24). Only the ink cartridge which the OEM supply place (or affiliated company) defined beforehand sold by this can be made usable.
[0048] Drawing 11 is the example of procedure in case the cleaning control condition is written in the cartridge EEPROM 21.
[0049] As shown in drawing 11 , when the printing processing circuit 15 receives the cleaning demand from a user, the data currently recorded on the cartridge EEPROM 21 are read (S31). The printing processing circuit 15 analyzes the read cleaning control condition, sets up cleaning conditions (for example, the amount of ink to attract) based on this (S32), and performs cleaning according to the condition (S33).
[0050] Drawing 12 is processing at the time of wearing of an ink cartridge 19 in case the cleaning control condition (or printing conditions) is written in the cartridge EEPROM 21, or the power-source turn-on of a printer 5.
[0051] The printing processing circuit 15 reads the data currently recorded on the cartridge EEPROM 21, when equipped with an ink cartridge 19, or when the turn-on of the power source of a printer 5 is carried out (S41). The printing processing circuit 15 analyzes the read cleaning control condition (or printing control condition), and sets up the interval (or printing conditions) of cleaning based on this (S42). Periodical automatic cleaning after this (or printing) is performed according to the conditions defined here.
[0052] Thereby, the operating condition of printers, such as cleaning conditions and a printing control condition, can be set up using the control information memorized by the cartridge EEPROM 21. Consequently, since various conditions can be set up for every ink cartridge, the situations (the difference in the operation of a printer, difference in climate, etc.) of a proper can be made to reflect in those who sell an ink cartridge, or the area sold.
[0053] In the first and second operation gestalten, you may also write in the PD information used for a cartridge EEPROM 21 in the circulation process of an ink cartridge 19. The delivery path which shows via which delivery base PD information is delivered, for example, the time which passed through each delivery base are required information in a PD process.
[0054] Furthermore, it sets in the first and second operation gestalten, and the cartridge EEPROM 21 may be divided into the field of plurality [storage region]. And as you may use it for every control information, dividing each storage region and it is shown in drawing 13 , another **** is also good for the field 211 which the manufacturer writes in, the field 212 which an affiliated company (or OEM supply place) writes in, the field 213 which a retail store writes in, and the field 214 which a printer 5 writes in. The field 212

which an affiliated company (or OEM supply place) writes in, and the field 213 which a retail store writes in are fields used in a distribution channel. The manufacturer, an affiliated company (or OEM supply place), a retail store, and a printer 5 can read all the fields 211, 212, 213, and 214, respectively. The information the field 214 which a printer 5 writes in indicates an ink residue to be is stored. Whenever a printer 5 consumes ink, it updates the information at any time.
[0055] As mentioned above, although the suitable operation gestalt of this invention was explained, this is the instantiation for explanation of this invention, and is not the meaning which limits the range of this invention only to this operation gestalt. This invention can be carried out with other various gestalten. That is, this invention is applicable also to the body of a device of not only the ink cartridge 19 but the printer 5, other articles of consumption, etc.
[0056] For example, as shown in drawing 5 , when the print sheet of a printer 5 is a roll sheet 75, the front face of the roll-sheet case 77 is equipped with EEPROM (henceforth, roll-sheet EEPROM)71 and the coil 73 for accessing roll-sheet EEPROM71 by electromagnetic induction, and the transparence aperture which can look into a coil 73 is prepared in the package which contains a roll sheet 75 at the time of shipment so that roll-sheet EEPROM71 can be accessed make [it / the package / receipt]. On the other hand, a printer 5 is equipped with data readout / memory interface for writing in, and a coil to roll-sheet EEPROM71 at a roll-sheet holder (not shown).
[0057] as for retail stores 40a and 40b and --, the roll sheet 75 was purchased in this operation gestalt -- coming -- with data write-in equipment 47, roll-sheet EEPROM71 is accessed by non-contact from from outside the package of a roll sheet 75, and purchased data etc. are written in.
[0058] When that roll sheet 75 is set to the roll-sheet holder of a printer 5, when there are not read-out and purchased data about data, it is made not to carry out printing processing with the memory interface with which the roll-sheet holder was equipped with the printing processing circuit 15 using this roll sheet 75 from roll-sheet EEPROM71.

TECHNICAL FIELD

[Field of the Invention] This invention relates to the components, article of consumption, or accessory (on these specifications, these are named generically and it is only called the "components") for the devices by which the option of devices, such as a personal computer and a printer, and the body of the device is carried out.

PRIOR ART

[Description of the Prior Art] A printer is taken for an example and explained below.
[0003] It is equipping with optional components (for example, a roll sheet, an ink cartridge, etc.), and a printer will be in an usable condition for the first time at the body of a printer. Since many of these option components are articles of consumption, a user needs to go to a retail store and sometimes needs to purchase option components.

[0004] In the case of the ink cartridge etc., semiconductor memory is attached in this and what the semiconductor memory is made to memorize various control information for ink use, and the body of a printer reads it into it, and is used for control is known. The semiconductor memory prepared in this conventional ink cartridge is the memory of a contact process which can be accessed now because have a metal terminal on a front face and terminals, such as a body, contact there.

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] By the way, since carrying is the thing of the small size which can be contained [that it is easy and] in a bag etc., many of option components of devices including an ink cartridge may be set as the object of a shoplifter at a retail store. In order to prevent it, at some retail stores, the card which displays option components to the place which a consumer's hand does not reach, or displayed the trade name on it for every option components was prepared, it was put in order, and the measure of shoplifter prevention, such as passing the actual thing in exchange for the card, is taken. However, for a retail store, a burden is placed by taking the measure of such shoplifter prevention, it is troublesome, and for a consumer, since can take the actual thing in its hand and it cannot be easily seen before purchase, it is inconvenient.
[0006] Moreover, there is a request that the distribution industry company who wholesales not a manufacturer but it for the data stored in the semiconductor memory of option components, or sells at retail wants to customize a request. For example, at each retail store, while giving profits and convenience to the consumer who purchased it by writing in the information for offering service original with the memory of option components in the case of sale, there is a case where he wants to advertize the description of the retail store etc. Moreover, by the manufacturer of option components, when manufacturing by the same hardware configuration, wholesaling it or selling all the option components two or more models and for two or more destination, there is a case where he wants to write the control information of the contents for which it was suitable for every model and every destination in memory, and to sell it. However, on a distribution channel, since components are already stored in the package, it is already impossible to access memory and, therefore, it cannot be satisfied with option components with the memory of the conventional contact process of the above-mentioned request.
[0007] Therefore, the purpose of this invention is to carry out shoplifter prevention of option components so that it may not become troublesome for a retail store and may not become inconvenient to a consumer.
[0008] Moreover, another purpose of this invention is to enable it to customize a request to the storage of option components on the distribution channel crossed to a consumer's hand, after being manufactured.

MEANS

[Means for Solving the Problem] the option components of the device according to the 1st side face of this invention have accessible (using radio signals, such as an electric wave, light, or a supersonic wave) storage by non-contact from outside the package of option components or -- in a distribution channel until it crosses to a consumer's hand for storing the control information needed in order that a device may carry out predetermined actuation in the condition of having equipped with option components. storing control information here -- (1) -- storing said control information in said storage with which said control information is not stored -- [for example,] (2) Said mistaken control information is changed into right control information to said storage with which the mistaken control information is stored, (3) -- it is either of eliminating said prohibition information of operation from said storage with which the prohibition information of operation for forbidding carrying out said predetermined actuation to said device is stored. [or] The device by which it was equipped with option components is made not to carry out the above-mentioned predetermined actuation, if control information is not stored in the storage of the option component. The store of option components can be accessed [from] outside the package of this option component.

[0010] Since it is possible to store control information in storage by non-contact according to this invention, when option components are purchased, control information can be stored in the storage of the option component from from outside a package at a retail store. For this reason, since control information is not stored in the shoplifted option components, even if it equips a device with the shoplifted option components, that device does not operate. Therefore, the shoplifter of option components can be prevented.

[0011] Moreover, since it is possible to store control information in storage by non-contact, a request is customizable to the storage of option components on a distribution channel. For example, when manufacturing all the option components two or more models and for two or more destination by the same hardware configuration and wholesaling or selling it, outside a package, from from, the manufacturer of option components can write the control information of the contents for which it was suitable for every model and every destination in storage, and can sell it.

[0012] As for the body of a device, and its body of a device, the device according to the 2nd side face of this invention is equipped with the option components by which an option is carried out. Option components have [from] accessible storage by non-contact outside the package for storing the control information needed in order that a device may carry out predetermined actuation in the condition of having equipped with the option component. The body of a device carries out predetermined actuation, only when are equipped with the option component, and control information is stored in the storage of the option component.

[0013] The equipment which accesses the storage of the option components according to the 3rd side face of this invention is installed by the distribution industry company of option components, accesses the accessible storage with which the option components of the device by which an option is carried out to the body of a device were equipped according to non-contact by non-contact, and is equipped with a means store in the storage of the option component the control information needed in order that a device

may carry out actuation predetermined in the condition equipped with option components.
[0014] Michikata Nagare of option components according to the 4th side face of this invention -- law has the step which stores in the above-mentioned storage the control information needed in order that a device may consider actuation predetermined in the condition of having equipped with option components as the step which accesses the accessible storage with which the option component was equipped in the distribution channel after option components are manufactured until it crosses to a consumer's hand according to non-contact by non-contact.
[0015]
[Embodiment of the Invention] This invention is applicable to the components of all devices. The operation gestalt when applying this invention to the ink cartridge with which the ink jet printer which is a recording apparatus is equipped exchangeable hereafter using a drawing is explained.
[0016] Drawing 1 shows an example of the ink cartridge concerning the first operation gestalt of this invention, and its distribution channel.
[0017] It has the case which stored the ink hold machine which is not illustrated, the storage 21 of a non-volatile, for example, EEPROM, (the following, Cartridge EEPROM), and the coil 37 for accessing a cartridge EEPROM 21 by non-contact by electromagnetic induction are carried in the manufacturer 30, and the ink cartridge 19 concerning this operation gestalt is contained by the predetermined package 50 (the coil 37 is exposed to a cartridge EEPROM 21 accessible at the outside surface of an ink cartridge 19). And the ink cartridge 19 is shipped to the various retail stores 40a and 40b, such as a department store and an electrical appliances store, and -- from the manufacturer 30. In addition, in the manufacturer 30, the date of manufacture of the Cartridge ID (for example, manufacture serial number) and the ink cartridge 19 which memorized the information relevant to an ink cartridge 19, for example, the class of ink cartridge 19 etc., and the ink property information in an ink cartridge 19 (a class, color, etc.) are written in EEPROM21 of an ink cartridge 19.
[0018] Here, degassing of the ink held in the ink cartridge 19 is carried out. Degassing means the condition of having removed the air (nitrogen, oxygen, etc.) which has melted into ink. It is hard coming to generate air bubbles in ink by carrying out like this. If the air bubbles generated in ink go into the passage of an ink jet recording head etc., it may have big effect on an ink regurgitation property. In the method which the volume of the nozzle which carries out the regurgitation of the ink especially, and a pressure room open for free passage is changed, and carries out the regurgitation of the ink, for example, the method using a piezoelectric device, since the pressure generated by volume change will be absorbed with air bubbles, the event in which ink is not breathed out may also be generated.
[0019] A package 50 is a product made of paper, even if an ink cartridge 19 is contained by the package 50, through a package 50, through the coil 37 of an ink cartridge 19, can access a cartridge EEPROM 21 and can carry out data readout and writing. Through the transparence aperture 45 of a package 50, in the case of an optical R/W method, a cartridge 19 can be accessed, and it can carry out data readout and writing.
[0020] The data write-in equipment 47 which writes predetermined data in EEPROM21 of an ink cartridge 19 is formed in each retail stores 40a and 40b and --. Data write-in

equipment 47 has the coil 43 for accessing a cartridge EEPROM 21 by non-contact by electromagnetic induction, and the memory interface 41 for writing data in a cartridge EEPROM 21. At the time of predetermined, for example, when a consumer purchases an ink cartridge 19 justly, through the transparence aperture 45 of the package 50 of an ink cartridge 19, predetermined data are written in a cartridge EEPROM 21, or the memory interface 41 is used [**** / supplying power] as a cartridge EEPROM 21 by actuation of the employee of a retail store. There are service provision data (for example, confidential information which only the consumer who purchased at the retail store can know (URL of the Web page for receiving specific service etc.)) for providing a consumer with the purchased data in which the purport which purchased the ink cartridge 19 is shown as data to write in, and original service etc.

[0021] In the print system mentioned later, it operates based on the manufacturer 30 and retail stores 40a and 40b, and the data written in the cartridge EEPROM 21 in --.

[0022] Drawing 2 is the block diagram showing the overall configuration of the print system concerning the first operation gestalt of this invention.

[0023] In this drawing, host equipment 1 is connected with the ink jet printer (henceforth a printer) 5 through the printer interface circuit 3. This host equipment 1 is the computer of a general-purpose mold typically like a personal computer, and has the printer driver 7 which is the software which performs creation processing of the print data which should be sent to a printer 5.

[0024] It connects with host equipment 1 through the host interface circuit 13, and is equipped with a printer 5 free [attachment and detachment of an ink cartridge 19]. The printer 5 has the memory interface 31, the printing processing circuit 15, and the print station 20.

[0025] The memory interface 31 has the coil 35, using this coil 35 and the coil 37 of a cartridge EEPROM 21, under the control of the printing processing circuit 15 by electromagnetic induction, supply power to a cartridge EEPROM 21, or reads the data currently recorded by the cartridge EEPROM 21, or writes data in a cartridge EEPROM 21. As data to write in, they are the opening date (that is, date which uses an ink cartridge 19 for the first time) of an ink cartridge 19, a current ink residue, etc.

[0026] The printing processing circuit 15 performs creation, a vertical format unit, etc. of a printing image based on the print data transmitted through the host interface circuit 13 from host equipment 1. Although the printing processing circuit 15 is not illustrated, it is equipped with a print head drive circuit, the motorised circuit, the data write-in circuit to an ink cartridge 19, the I/O circuit of external data, CPU that controls the printing processing circuit 15 whole. Moreover, the printing processing circuit 15 is equipped with the storage 17 of the non-volatile for saving specific data, for example, EEPROM, (the following, Printer EEPROM). Although the printing processing circuit 15 is mentioned later for details, it controls the memory interface 31 and controls actuation of a printer 5, and use of an ink cartridge 19 for the data currently written in the cartridge EEPROM 21 based on read-out and it.

[0027] A print station 20 is printed under control of the printing image which the printing processing circuit 15 created of the printing processing circuit 15. Although the print station 20 is not illustrated, it consists of the print head, carriage, paper feed equipment, head maintenance equipment, etc., and is equipped with the exchangeable ink cartridge 19 for supplying ink to the print head free [attachment and detachment].

[0028] If a printer 5 is completely equipped with an ink cartridge 19, the coil 37 of a cartridge EEPROM 21 and the coil 35 of the memory interface 31 of a printer 5 can combine it electrically. If it does so, it will enable the printing processing circuit 15, to write data in a cartridge EEPROM 21, or to carry out through the memory interface 31. [reading data from a cartridge EEPROM 21]
[0029] Although there are generally an on-carriage type carried with the print head on carriage and an off carriage type set to the immovable location distant from carriage as type of an ink cartridge, the ink cartridge 19 of this operation gestalt may be which type. Moreover, an ink cartridge 19 can also be used for two or more printers about as it equips a certain printer, and it removes and another printer is re-equipped, after [a certain] using a grade.
[0030] Hereafter, the flow of the processing which the printing processing circuit 15 in an above-mentioned print system performs is explained.
[0031] Drawing 3 shows the flow of processing of the printing processing circuit 15 performed at the time of wearing of an ink cartridge 19.
[0032] When equipped with an ink cartridge 19, or when the turn-on of the power source of a printer 5 is carried out, the printing processing circuit 15 reads the data currently recorded on the cartridge EEPROM 21 (step S1), and checks the existence of purchased data (S2). In this check, if there are purchased data (it is Yes at S2) Predetermined processing of filling up the print head with the ink in an ink cartridge 19 is started (S3). the message (since there is no record of the purchased purport, printing processing cannot be started! please ask the purchased retail store. for example, -- "--) of the purport which does not carry out printing activation without purchased data (it is No at S2) ") is displayed on the display of host equipment 1, and it is made not to print using an ink cartridge 19 (S4).
[0033] After checking that there are purchased data, the printing processing circuit 15 performs predetermined processing for service provision data from a cartridge EEPROM 21 based on read-out and its data to predetermined timing. For example, in being URL of the Web page which only the consumer whom the read service provision data purchased at the retail store can know, it displays a screen as shown in drawing 4 on the display of host equipment 1. A consumer can receive information and service original with a retail store, if the URL is accessed.
[0034] The above is explanation of this operation gestalt. In addition, data write-in equipment 47 and a printer 5, and the data communication (that is, read-out and writing of data to a cartridge EEPROM 21) with a cartridge EEPROM 21 are possible not only by non-contact but the various methods (for example, optical communication using a light emitting device and a photo detector) of having used electromagnetic induction.
[0035] According to the operation gestalt mentioned above, in each retail stores 40a and 40b and --, when an ink cartridge 19 is purchased justly, a cartridge EEPROM 21 can be accessed by non-contact from from outside a package 50, and the purchased data of an ink cartridge 19 can be written in. The printer 5 by which it was equipped with the ink cartridge 19 does not perform printing processing which used the ink cartridge 19, if purchased data are not recorded on a cartridge EEPRM21. Since purchased data are not recorded on the shoplifted ink cartridge 19 by this even if it shoplifts and uses an ink cartridge 19, a printer 5 does not operate. That is, since the shoplifted ink cartridge 19 cannot be used, shoplifter prevention of an ink cartridge 19 can be aimed at.

[0036] moreover, according to the operation gestalt mentioned above, after an ink cartridge 19 is manufactured, a request is customizable to a cartridge EEPROM 21 on a distribution channel until it crosses to the hand boiled a consumption person. For example, in each retail stores 40a and 40b and --, original service provision data can be written in a cartridge EEPROM 21. Thereby, retail stores 40a and 40b and -- can advertize the retail stores 40a and 40b, the description of --, etc. while giving profits and convenience to the retail stores 40a and 40b and the consumer who purchased the ink cartridge 19 by --. Moreover, when manufacturing all the ink cartridges two or more models and for two or more destination by the same hardware configuration and wholesaling or selling it, the manufacturer of an ink cartridge 19 can write the information on the contents that it was suitable for every model and every destination in Cartridge EEPROM, and can sell it.

[0037] Next, the second operation gestalt of this invention is explained. This operation gestalt explains focusing on a different point from the first operation gestalt. With this operation gestalt, while circulating from the manufacturer of an ink cartridge to a retail store, various information is written in a cartridge EEPROM 21, and the case where a print system uses it is shown. Especially this operation gestalt is suitable when those who manufacture an ink cartridge differ from those who sell. For example, it is the case where manufacture in the case of the so-called OEM which a manufacturer supplies to other manufacturers and the manufacturer who received supply sells by its own brand, or a certain country, and the affiliated company of other countries sells it etc. Here, it explains taking the case of the case of OEM, or the case where the affiliated company of two or more overseas sells, respectively.

[0038] Drawing 6 shows the example of the ink cartridge concerning the second operation gestalt of this invention, and the distribution channel through the affiliated company (or OEM supply place) of OEM or an overseas.

[0039] With this operation gestalt, since it is a pollution control when ink begins to leak from an ink cartridge by antiflashing of the ink held in the interior, a unforeseen accident, etc., an ink cartridge 19 seals and is packed. Moreover, when degassing of the ink held in the interior is carried out, before starting use, reduced pressure packing of the air is carried out at the ink in an ink cartridge so that whenever [penetration and degassing] may not fall. Reduced pressure packing of an ink cartridge is explained using drawing 7 . The bag 60 formed as packaging used for this packing with the film of the property which intercepts air is used. As shown in drawing 7 (a), an ink cartridge 19 is held in this bag 60. From opening 60a, the air in a bag 60 is sucked out, in the condition of having decompressed, opening 60a is closed by thermocompression bonding etc. and reduced pressure packing is carried out. After closing opening 60a, as shown in drawing 7 (b), remainder 60b may also fold up.

[0040] The cartridge EEPROM 21 is accessible non-contact [the exterior to] as well as the 1st operation gestalt. That is, reading and an ink cartridge can write various information from the exterior to a cartridge EEPROM 21, where reduced pressure packing is carried out. When a cartridge EEPROM 21 is an optical R/W method, as shown in drawing 8 , to prepare transparence aperture 60c in a bag 60, to access a cartridge 19 through this transparence aperture 60c, and what is necessary is just made to carry out data readout and writing.

[0041] They are the control condition of cleaning of the printer head which are the model

ID which is information for present ** ID which is the information for identifying each affiliated company, and an ink cartridge 19 to identify the model of usable printer as information written in a cartridge EEPROM 21 here, for example, and an operating condition at the time of a maintenance, or the drive conditions of a printer head. The control condition at the time of cleaning of a printer head is the amount of ink attracted in cleaning, or an interval in the case of performing automatic cleaning periodically. The drive conditions of a printer head are the amounts of ink which carry out the regurgitation, when printing 1 dot. A cleaning control condition or the drive conditions of a head can be defined according to the climates (for example, the averages, such as atmospheric temperature, humidity, and rainfall, a peak price, or the minimum value etc.) of the country to which an ink cartridge 19 is sold, or an area.

[0042] Moreover, the supply place ID which is the information for identifying the firm of the partner who supplies as OEM etc. in the case of OEM is written in a cartridge EEPROM 21.

[0043] Based on the data written in the cartridge EEPROM 21, the print system shown in drawing 2 operates like the 1st operation gestalt. This operation gestalt uses and explains drawing 9 - drawing 12 according to the data in which the flow of the processing which the printing processing circuit 15 performs was written by the cartridge EEPROM 21.

[0044] Drawing 9 is the example of procedure in case the model ID of printer is written in the cartridge EEPROM 21. At this time, the model ID of printer 5 is beforehand memorized by the printer EEPROM 17.

[0045] The printing processing circuit 15 reads the data currently recorded on the cartridge EEPROM 21, when equipped with an ink cartridge 19, or when the turn-on of the power source of a printer 5 is carried out (S11). It is confirmed whether the printing processing circuit 15 is in agreement with the model ID which read the model ID of printer 5 beforehand memorized by the printer EEPROM 17, and was read from the cartridge EEPROM 21 (S12). In this check, if Model ID is in agreement (it is Yes at S12) the message (this ink cartridge cannot be used by this type of printer. for example, -- "--) of the purport which starts predetermined processing of filling up the print head with the ink in an ink cartridge 19 (S13), and does not carry out printing activation if not in agreement (it is No at S12) ") is displayed on the display of host equipment 1, and it is made not to print using an ink cartridge 19 (S14). It can avoid using an ink cartridge by this by printers other than the model which was able to be defined beforehand.

[0046] Drawing 10 is the example of procedure in case the supply place ID of OEM (or present ** ID) is written in the cartridge EEPROM 21. At this time, the corresponding supply place ID (or present ** ID) is beforehand remembered to be a printer 5 by the printer EEPROM 17.

[0047] The printing processing circuit 15 reads the data currently recorded on the cartridge EEPROM 21, when equipped with an ink cartridge 19, or when the turn-on of the power source of a printer 5 is carried out (S21). It is confirmed whether the printing processing circuit 15 is in agreement with the supply place ID (or present ** ID) which read the supply place ID (or present ** ID) memorized beforehand to the printer EEPROM 17, and was read from the cartridge EEPROM 21 (S12). In this check, if the supply place ID (or present ** ID) is in agreement (it is Yes at S22) the message (this ink cartridge cannot be used by this type of printer. for example, -- "--) of the purport which starts predetermined processing of filling up the print head with the ink in an ink

cartridge 19 (S23), and does not carry out printing activation if not in agreement (it is No at S22) ") is displayed on the display of host equipment 1, and it is made not to print using an ink cartridge 19 (S24). Only the ink cartridge which the OEM supply place (or affiliated company) defined beforehand sold by this can be made usable.
[0048] Drawing 11 is the example of procedure in case the cleaning control condition is written in the cartridge EEPROM 21.
[0049] As shown in drawing 11 , when the printing processing circuit 15 receives the cleaning demand from a user, the data currently recorded on the cartridge EEPROM 21 are read (S31). The printing processing circuit 15 analyzes the read cleaning control condition, sets up cleaning conditions (for example, the amount of ink to attract) based on this (S32), and performs cleaning according to the condition (S33).
[0050] Drawing 12 is processing at the time of wearing of an ink cartridge 19 in case the cleaning control condition (or printing conditions) is written in the cartridge EEPROM 21, or the power-source turn-on of a printer 5.
[0051] The printing processing circuit 15 reads the data currently recorded on the cartridge EEPROM 21, when equipped with an ink cartridge 19, or when the turn-on of the power source of a printer 5 is carried out (S41). The printing processing circuit 15 analyzes the read cleaning control condition (or printing control condition), and sets up the interval (or printing conditions) of cleaning based on this (S42). Periodical automatic cleaning after this (or printing) is performed according to the conditions defined here.
[0052] Thereby, the operating condition of printers, such as cleaning conditions and a printing control condition, can be set up using the control information memorized by the cartridge EEPROM 21. Consequently, since various conditions can be set up for every ink cartridge, the situations (the difference in the operation of a printer, difference in climate, etc.) of a proper can be made to reflect in those who sell an ink cartridge, or the area sold.
[0053] In the first and second operation gestalten, you may also write in the PD information used for a cartridge EEPROM 21 in the circulation process of an ink cartridge 19. The delivery path which shows via which delivery base PD information is delivered, for example, the time which passed through each delivery base are required information in a PD process.
[0054] Furthermore, it sets in the first and second operation gestalten, and the cartridge EEPROM 21 may be divided into the field of plurality [storage region]. And as you may use it for every control information, dividing each storage region and it is shown in drawing 13 , another **** is also good for the field 211 which the manufacturer writes in, the field 212 which an affiliated company (or OEM supply place) writes in, the field 213 which a retail store writes in, and the field 214 which a printer 5 writes in. The field 212 which an affiliated company (or OEM supply place) writes in, and the field 213 which a retail store writes in are fields used in a distribution channel. The manufacturer, an affiliated company (or OEM supply place), a retail store, and a printer 5 can read all the fields 211, 212, 213, and 214, respectively. The information the field 214 which a printer 5 writes in indicates an ink residue to be is stored. Whenever a printer 5 consumes ink, it updates the information at any time.
[0055] As mentioned above, although the suitable operation gestalt of this invention was explained, this is the instantiation for explanation of this invention, and is not the meaning which limits the range of this invention only to this operation gestalt. This

invention can be carried out with other various gestalten. That is, this invention is applicable also to the body of a device of not only the ink cartridge 19 but the printer 5, other articles of consumption, etc.
[0056] For example, as shown in drawing 5 , when the print sheet of a printer 5 is a roll sheet 75, the front face of the roll-sheet case 77 is equipped with EEPROM (henceforth, roll-sheet EEPROM)71 and the coil 73 for accessing roll-sheet EEPROM71 by electromagnetic induction, and the transparence aperture which can look into a coil 73 is prepared in the package which contains a roll sheet 75 at the time of shipment so that roll-sheet EEPROM71 can be accessed make [it / the package / receipt]. On the other hand, a printer 5 is equipped with data readout / memory interface for writing in, and a coil to roll-sheet EEPROM71 at a roll-sheet holder (not shown).
[0057] as for retail stores 40a and 40b and --, the roll sheet 75 was purchased in this operation gestalt -- coming -- with data write-in equipment 47, roll-sheet EEPROM71 is accessed by non-contact from from outside the package of a roll sheet 75, and purchased data etc. are written in.
[0058] When that roll sheet 75 is set to the roll-sheet holder of a printer 5, when there are not read-out and purchased data about data, it is made not to carry out printing processing with the memory interface with which the roll-sheet holder was equipped with the printing processing circuit 15 using this roll sheet 75 from roll-sheet EEPROM71.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] The block diagram showing an example of the ink cartridge concerning the first operation gestalt of this invention, and its distribution channel.
[Drawing 2] The block diagram showing the overall configuration of the print system concerning the first operation gestalt of this invention.
[Drawing 3] The flow chart of processing of the printing processing circuit 15 performed at the time of wearing of an ink cartridge 19.
[Drawing 4] The display screen of service provision data.
[Drawing 5] Drawing of a printer roll sheet in which EEPROM was carried.
[Drawing 6] The block diagram showing an example of the ink cartridge concerning the second operation gestalt of this invention, and its distribution channel.
[Drawing 7] The procedure of reduced pressure packing, and drawing of an ink cartridge 19 by which reduced pressure packing was carried out.
[Drawing 8] Drawing of the ink cartridge 19 by which reduced pressure packing was carried out.
[Drawing 9] The flow chart of processing of the printing processing circuit 15 performed at the time of wearing of an ink cartridge 19.
[Drawing 10] The flow chart of processing of the printing processing circuit 15 performed at the time of wearing of an ink cartridge 19.
[Drawing 11] The flow chart of processing of the printing processing circuit 15 performed to a cleaning demand.
[Drawing 12] The flow chart of processing of the printing processing circuit 15 performed at the time of wearing of an ink cartridge 19.

[Drawing 13] Drawing of a cartridge EEPROM 21 divided into two or more storage regions.

[Description of Notations]

1 Host Equipment
3 Printer Interface
5 Ink Jet Printer
7 Printer Driver
13 Host Interface
15 Printing Processing Circuit
17 EEPROM (Printer EEPROM)
19 Ink Cartridge
20 Print Station
21 EEPROM (Cartridge EEPROM)
30 Manufacturer
31 41 Memory interface
35, 37, 43 Coil
40a, 40b, -- Retail store
45 Transparence Aperture
47 Data Write-in Equipment
50 Package
60 Bag

(19)日本国特許庁（ＪＰ）　(12) **公開特許公報（Ａ）**　(11)特許出願公開番号
特開2002－207807
（P2002－207807A）
(43)公開日　平成14年７月26日(2002.7.26)

(51)Int.Cl.[7]	識別記号	ＦＩ		テーマコード（参考）
Ｇ０６Ｆ　17/60	１１８	Ｃ０６Ｆ　17/60	１１８	２Ｃ０５６
Ｂ４１Ｊ　2/175		Ｂ４１Ｊ　29/38	Ｚ	２Ｃ０６１
29/00		Ｇ０６Ｆ　3/12	Ｋ	５Ｂ０２１
29/38		Ｂ４１Ｊ　29/00	Ｚ	５Ｂ０３５
Ｇ０６Ｆ　3/12		3/04	１０２Ｚ	

審査請求　未請求　請求項の数18　ＯＬ　（全 11 頁）　最終頁に続く

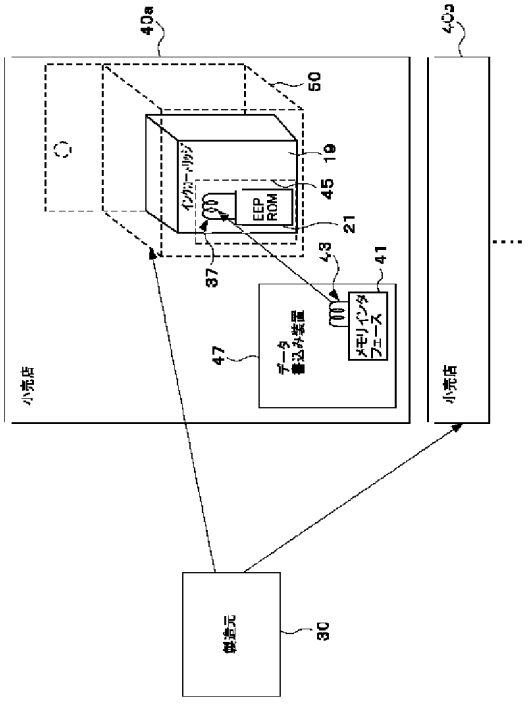
(21)出願番号　特願2001－271525(P2001－271525)
(22)出願日　平成13年９月７日(2001.9.7)
(31)優先権主張番号　特願2000－283456(P2000－283456)
(32)優先日　平成12年９月19日(2000.9.19)
(33)優先権主張国　日本（ＪＰ）

(71)出願人　000002369
セイコーエプソン株式会社
東京都新宿区西新宿２丁目４番１号
(72)発明者　中　隆廣
長野県諏訪市大和３丁目３番５号　セイコーエプソン株式会社内
(74)代理人　100084032
弁理士　三品　岩男　（外１名）

Ｆターム(参考)　2C056 EA26 EA29 EB50 EB59 KC01
2C061 AQ05 CC03 CC15 CL06 CL10
HK23
5B021 AA01 NN00
5B035 AA13 BB09 BC00 CA23

(54)【発明の名称】　機器の別売り部品、別売り部品を有する機器、アクセス装置、別売り部品の流通方法、および、インクカートリッジ

(57)【要約】
【課題】　製造されてから消費者の手に渡る流通経路の途中で別売り部品の記憶装置に所望のカスタマイズをすることができるようにする。
【解決手段】　インクカートリッジ１９に、非接触でアクセスできるカートリッジＥＥＰＲＯＭ２１を搭載し、インクカートリッジ１９のパッケージ５０に透明窓４５を備える。小売店４０ａ、４０ｂ、…に、カートリッジＥＥＰＲＯＭ２１にデータを書込むためのメモリインタフェース４１とコイル４３とを備えたデータ書込み装置４７を設置する。消費者がインクカートリッジ１９を購入したときに、透明窓４５を介して購入済みデータ等をカートリッジＥＥＰＲＯＭ２１に書込む。プリンタ５は、インクカートリッジ１９が装着されたときにカートリッジＥＥＰＲＯＭ２１からデータを読出し、購入済みデータが無い時は動作しないようにする。



【特許請求の範囲】
【請求項１】　機器本体とは別売りされる機器の別売り部品において、
前記別売り部品を装着した状態で前記機器が所定の動作をするために必要とする制御情報を格納するための、消費者の手に渡るまでの流通経路において非接触でアクセス可能な記憶装置を有する機器の別売り部品。
【請求項２】　前記制御情報を格納するとは、
（１）前記制御情報が格納されていない前記記憶装置に前記制御情報を格納すること、
（２）誤った制御情報が格納されている前記記憶装置に対し、前記誤った制御情報を正しい制御情報に変更すること、又は、
（３）前記機器に前記所定の動作をすることを禁止するための動作禁止情報が格納されている前記記憶装置から前記動作禁止情報を消去すること、のいずれかである請求項１記載の別売り部品。
【請求項３】　前記制御情報は、小売店で正当に購入した場合に格納される請求項１記載の別売り部品。
【請求項４】　前記別売り部品を収納したパッケージの外から前記記憶装置に非接触でアクセスすることにより、前記制御情報を前記記憶装置に格納することができるように構成されている請求項１記載の別売り部品。
【請求項５】　機器本体と、
前記機器本体とは別売りされる別売り部品とを備え、
前記別売り部品が、前記別売り部品を装着した状態で前記機器が所定の動作をするために必要とする制御情報を格納するための、パッケージの外から非接触でアクセス可能な記憶装置を有し、
前記機器本体に前記別売り部品が装着されたときは、前記機器本体が、前記記憶装置に前記制御情報が格納されているときにのみ前記所定の動作をする機器。
【請求項６】　機器本体とは別売りされる機器の別売り部品に備えられた非接触でアクセス可能な記憶装置に、非接触でアクセスして、前記機器が前記別売り部品を装着した状態で所定の動作をするために必要とする制御情報を、前記別売り部品の記憶装置に格納する手段を備え、前記別売り部品の流通業者に設置される、別売り部品の記憶装置にアクセスする装置。
【請求項７】　前記別売り部品を収納したパッケージの外から前記記憶装置にアクセスする請求項６記載の装置。
【請求項８】　機器本体とは別売りされる機器の別売り部品が製造されてから消費者の手に渡るまでの流通経路において、前記別売り部品に備えられた非接触でアクセス可能な記憶装置に、非接触でアクセスするステップと、
前記機器が前記別売り部品を装着した状態で所定の動作をするために必要とする制御情報を、前記別売り部品の記憶装置に格納するステップとを有する別売り部品の流通方法。
【請求項９】　前記制御情報を格納するとは、
（１）前記制御情報が格納されていない前記記憶装置に前記制御情報を格納すること、
（２）誤った制御情報が格納されている前記記憶装置に対し、前記誤った制御情報を正しい制御情報に変更すること、又は、
（３）前記機器に前記所定の動作をすることを禁止するための動作禁止情報が格納されている前記記憶装置から前記動作禁止情報を消去すること、のいずれかである請求項８記載の別売り部品の流通方法。
【請求項１０】　機器本体とは別売りされる機器の別売り部品において、
前記別売り部品を装着した状態で前記機器が所定の動作をするために必要とする制御情報を、前記別売り部品が梱包材によって減圧梱包された状態で外部から書き込み可能な記憶装置を有する機器の別売り部品。
【請求項１１】　前記制御情報は、（１）前記機器の機種を識別する情報、（２）前記機器の駆動条件を示す情報、（３）前記機器のメンテナンス時の動作条件を示す情報、または、（４）当該別売り部品を販売する者を識別する情報、のいずれかである請求項１０記載の別売り部品。
【請求項１２】　前記記憶装置には、さらに、外部から前記別売り部品の物流過程において必要とする物流情報が書き込み可能である請求項１０記載の別売り部品。
【請求項１３】　前記記憶装置は、前記別売り部品の製造元により情報が書き込まれる領域と、流通過程において情報が書き込まれる領域と、前記機器により情報が書き込まれる領域とに分割されている請求項１２記載の別売り部品。
【請求項１４】　インクを収容した容器と、非接触で読み書き可能な記憶装置とを有するインクカートリッジにおいて、
前記カートリッジが未使用のとき、前記記憶装置が読み書き可能な状態で梱包されているインクカートリッジ。
【請求項１５】　前記包装は、減圧包装である請求項１４記載のインクカートリッジ。
【請求項１６】　前記包装は、密閉包装である請求項１４記載のインクカートリッジ。
【請求項１７】　前記インクが、脱気されたインクである請求項１４記載のインクカートリッジ。
【請求項１８】　前記インクカートリッジは、記録装置に装着されて使用されるものであり、
前記記憶装置は、前記記録装置が所定の動作を行うのに必要な制御情報を記憶するための第１の領域と、当該インクカートリッジ内に収容されているインク量に関する情報を記憶するための第２の領域とを有する請求項１４記載記載のインクカートリッジ。
【発明の詳細な説明】

【０００１】
【発明の属する技術分野】本発明は、パーソナルコンピュータやプリンタ等の機器と、その機器の本体とは別売りされるその機器用の部品、消耗品又は付属品（本明細書では、これらを総称して単に「部品」という）に関する。
【０００２】
【従来の技術】プリンタを例にとり、以下説明する。
【０００３】プリンタは、そのプリンタ本体に、それとは別売りの部品（例えば、ロール紙やインクカートリッジ等）を装着することで、初めて使用可能な状態になる。これらの別売り部品の多くは、消耗品であるため、ユーザは、時々、小売店へ行って別売り部品を購入する必要がある。
【０００４】インクカートリッジなどの場合、これに半導体メモリを取付け、その半導体メモリに、インク使用のための様々な制御情報を記憶させておき、それをプリンタ本体が読み込んで制御に使用するものが知られている。この従来のインクカートリッジに設けられた半導体メモリは、金属端子を表面に有し、そこに本体などの端子が接触することでアクセスできるようになる接触式のメモリである。
【０００５】
【発明が解決しようとする課題】ところで、インクカートリッジを始めとする機器の別売り部品の多くは、持ち運びが簡単でカバン等に収納可能な小さいサイズのものであるため、小売店において、万引きの対象となることがある。それを防ぐため、いくつかの小売店では、消費者の手の届かない所に別売り部品を陳列する、或いは、別売り部品毎に商品名を表示したカードを用意してそれを並べ、そのカードと引き換えに現物を渡すなどの万引き防止の措置をとっている。しかし、このような万引き防止の措置をとることは、小売店にとっては負担がかかって面倒であり、消費者にとっては購入前に手軽に現物を手にとって見ることができないので不便である。
【０００６】また、別売り部品の半導体メモリに格納されるデータを、製造者ではなく、それを卸したり小売りしたりする流通業者が、所望のカスタマイズをしたいという要望がある。例えば、各小売店では、販売の際に別売り部品のメモリに独自のサービスを提供するための情報を書込むことで、それを購入した消費者に利益や利便を与えると共に、その小売店の特徴等をアピールしたい場合がある。また、別売り部品のメーカーでは、複数の機種や複数の仕向け先用の別売り部品を、全て同じハードウェア構成で製造して、それを卸したり販売したりするときに、機種毎や仕向け先毎に適した内容の制御情報をメモリに書込んで販売したい場合がある。しかし、従来の接触式のメモリを持った別売り部品では、流通経路上では既に部品はパッケージに収められているため、メモリにアクセスすることはもはや不可能であり、よって上記の要望を満足することはできない。
【０００７】従って、本発明の目的は、小売店にとって面倒とならず且つ消費者にとって不便とならないように、別売り部品の万引き防止をすることにある。
【０００８】また、本発明の別の目的は、製造されてから消費者の手に渡る流通経路上で別売り部品の記憶装置に所望のカスタマイズをすることができるようにすることにある。
【０００９】
【課題を解決するための手段】本発明の第１の側面に従う機器の別売り部品は、別売り部品を装着した状態で機器が所定の動作をするために必要とする制御情報を格納するための、消費者の手に渡るまでの流通経路において（又は別売り部品のパッケージの外から）非接触で（電波、光、或いは超音波などの無線信号を利用して）アクセス可能な記憶装置を有する。ここで、制御情報を格納するとは、例えば、（１）前記制御情報が格納されていない前記記憶装置に前記制御情報を格納すること、（２）誤った制御情報が格納されている前記記憶装置に対し、前記誤った制御情報を正しい制御情報に変更すること、又は、（３）前記機器に前記所定の動作をすることを禁止するための動作禁止情報が格納されている前記記憶装置から前記動作禁止情報を消去することのいずれかである。別売り部品が装着された機器は、その別売り部品の記憶装置に制御情報が格納されていなければ、上記所定の動作をしないようにする。別売り部品の記憶装置には、この別売り部品のパッケージの外からアクセスすることができる。
【００１０】本発明によれば、制御情報を非接触で記憶装置に格納することが可能なので、小売店では、別売り部品が購入されたときに、パッケージの外からその別売り部品の記憶装置に制御情報を格納することができる。このため、万引きした別売り部品には制御情報が格納されないので、万引きした別売り部品を機器に装着してもその機器は動作しない。よって、別売り部品の万引きを防ぐことができる。
【００１１】また、制御情報を非接触で記憶装置に格納することが可能なので、流通経路上で別売り部品の記憶装置に所望のカスタマイズをすることができる。例えば、別売り部品のメーカーは、複数の機種や複数の仕向け先用の別売り部品を全て同じハードウェア構成で製造して、それを卸したり販売したりするときは、パッケージの外から、機種毎や仕向け先毎に適した内容の制御情報を記憶装置に書込んで販売することができる。
【００１２】本発明の第２の側面に従う機器は、機器本体と、その機器本体とは別売りされる別売り部品とを備える。別売り部品は、その別売り部品を装着した状態で機器が所定の動作をするために必要とする制御情報を格納するための、パッケージの外から非接触でアクセス可能な記憶装置を有する。機器本体は、その別売り部品が

装着されたときは、その別売り部品の記憶装置に制御情報が格納されているときにのみ所定の動作をする。

【００１３】本発明の第３の側面に従う、別売り部品の記憶装置にアクセスする装置は、別売り部品の流通業者に設置されるものであり、機器本体とは別売りされる機器の別売り部品に備えられた非接触でアクセス可能な記憶装置に、非接触でアクセスして、機器が別売り部品を装着した状態で所定の動作をするために必要とする制御情報を、その別売り部品の記憶装置に格納する手段を備える。

【００１４】本発明の第４の側面に従う、別売り部品の流通方法は、別売り部品が製造されてから消費者の手に渡るまでの流通経路においてその別売り部品に備えられた非接触でアクセス可能な記憶装置に非接触でアクセスするステップと、機器が別売り部品を装着した状態で所定の動作をするために必要とする制御情報を上記記憶装置に格納するステップとを有する。

【００１５】

【発明の実施の形態】本発明は、あらゆる機器の部品に適用することができる。以下、図面を用いて、本発明を、記録装置であるインクジェットプリンタに交換可能に装着されるインクカートリッジに適用したときの実施形態を説明する。

【００１６】図１は、本発明の第一の実施形態に係るインクカートリッジとその流通経路の一例を示す。

【００１７】本実施形態に係るインクカートリッジ１９は、図示しないインク収容器を格納した筐体を有し、製造元３０において、不揮発性の記憶媒体、例えばＥＥＰＲＯＭ（以下、カートリッジＥＥＰＲＯＭ）２１と、電磁誘導により非接触でカートリッジＥＥＰＲＯＭ２１にアクセスするためのコイル３７とが搭載され、所定のパッケージ５０に収納される（コイル３７は、例えば、カートリッジＥＥＰＲＯＭ２１にアクセス可能にインクカートリッジ１９の外表面に露出している）。そして、そのインクカートリッジ１９は、製造元３０から、百貨店や電器店等の種々の小売店４０ａ、４０ｂ、…に出荷される。なお、製造元３０においては、インクカートリッジ１９のＥＥＰＲＯＭ２１に、インクカートリッジ１９に関連した情報、例えば、インクカートリッジ１９の種類などを記憶したカートリッジＩＤ（例えば製造シリアル番号）や、インクカートリッジ１９の製造年月日や、インクカートリッジ１９内のインク特性情報（種類、色など）が書込まれる。

【００１８】ここで、インクカートリッジ１９内に収容されているインクは、脱気されている。脱気とは、インク中に溶け込んでいる空気（窒素および酸素等）を除去した状態をいう。こうすることにより、インク中に気泡が発生し難くなる。仮に、インク中に発生した気泡がインクジェット記録ヘッドの流路等に入ると、インク吐出特性に大きな影響を与えることがある。特に、インクを吐出するノズルと連通する圧力室の容積を変化させてインクを吐出する方式、たとえば圧電素子を用いた方式においては、容積変化により発生した圧力が気泡により吸収されてしまうため、インクが吐出されないという事象も発生し得る。

【００１９】パッケージ５０は、紙製であり、パッケージ５０にインクカートリッジ１９が収納されたままであっても、パッケージ５０を介し、インクカートリッジ１９のコイル３７を通じて、カートリッジＥＥＰＲＯＭ２１にアクセスしデータ読出し及び書込みをすることができるようになっている。光学的読み書き方式の場合は、パッケージ５０の透明窓４５を介し、カートリッジ１９にアクセスしデータ読出し及び書込みをすることができる。

【００２０】各小売店４０ａ、４０ｂ、…には、所定のデータをインクカートリッジ１９のＥＥＰＲＯＭ２１に書込むデータ書込み装置４７が設けられている。データ書込み装置４７は、電磁誘導により非接触でカートリッジＥＥＰＲＯＭ２１にアクセスするためのコイル４３と、カートリッジＥＥＰＲＯＭ２１にデータを書込むためのメモリインタフェース４１とを有している。メモリインタフェース４１は、例えば小売店の従業員の操作により、所定の時、例えば消費者がインクカートリッジ１９を正当に購入した時に、カートリッジＥＥＰＲＯＭ２１に電力を供給したり、インクカートリッジ１９のパッケージ５０の透明窓４５を通じてカートリッジＥＥＰＲＯＭ２１に所定のデータを書込んだりする。書込むデータとしては、インクカートリッジ１９を購入した旨を示す購入済みデータ、独自のサービスを消費者に提供するためのサービス提供データ（例えば、その小売店で購入した消費者のみが知ることができる秘密情報（特定のサービスを受けるためのＷｅｂページのＵＲＬなど））等がある。

【００２１】後述するプリントシステムでは、製造元３０及び小売店４０ａ、４０ｂ、…においてカートリッジＥＥＰＲＯＭ２１に書込まれたデータを基に動作する。

【００２２】図2は、本発明の第一の実施形態に係るプリントシステムの全体的な構成を示すブロック図である。

【００２３】同図において、ホスト装置１は、プリンタインタフェース回路３を介してインクジェットプリンタ（以下、プリンタという）５と接続されている。このホスト装置１は、典型的にはパーソナルコンピュータのような汎用型のコンピュータであり、プリンタ５へ送るべき印刷データの作成処理を行なうソフトウェアであるプリンタドライバ7を有している。

【００２４】プリンタ５は、ホストインタフェース回路１３を介してホスト装置１に接続されており、インクカートリッジ１９が着脱自在に装着されるようになっている。プリンタ５は、メモリインタフェース３１と、印刷

処理回路１５と、印刷機構２０とを有している。
【００２５】メモリインタフェース３１は、コイル３５を有しており、このコイル３５とカートリッジＥＥＰＲＯＭ２１のコイル３７とを用いて電磁誘導により、印刷処理回路１５の制御の下、カートリッジＥＥＰＲＯＭ２１に電力を供給したり、カートリッジＥＥＰＲＯＭ２１に記録されているデータを読出したり、カートリッジＥＥＰＲＯＭ２１にデータを書込んだりする。書込むデータとしては、インクカートリッジ１９の開封年月日（つまりインクカートリッジ１９を初めて使用する日付）、現在のインク残量などである。
【００２６】印刷処理回路１５は、ホスト装置１からホストインタフェース回路１３を介して転送されて来る印刷データに基づいて印刷イメージの作成や紙送り制御等を行なう。印刷処理回路１５は、図示していないが、印刷ヘッド駆動回路や、モータ駆動回路や、インクカートリッジ１９へのデータ書込み回路や、外部データの入出力回路や、印刷処理回路１５全体を制御するＣＰＵなどを備えている。また、印刷処理回路１５は、特定のデータを保存しておくための不揮発性の記憶媒体、例えばＥＥＰＲＯＭ（以下、プリンタＥＥＰＲＯＭ）１７を備えている。印刷処理回路１５は、詳細は後述するが、メモリインタフェース３１を制御して、カートリッジＥＥＰＲＯＭ２１に書込まれているデータを読出し、それに基づいてプリンタ５の動作やインクカートリッジ１９の使用を制御する。
【００２７】印刷機構２０は、印刷処理回路１５が作成した印刷イメージを印刷処理回路１５の制御の下で印刷する。印刷機構２０は、図示していないが、印刷ヘッド、キャリッジ、紙送り装置、ヘッドメンテナンス装置などから構成され、インクを印刷ヘッドへ供給するための交換可能なインクカートリッジ１９が着脱自在に装着される。
【００２８】インクカートリッジ１９は、プリンタ５に完全に装着されると、カートリッジＥＥＰＲＯＭ２１のコイル３７と、プリンタ５のメモリインタフェース３１のコイル３５とが電気的に結合できるようになる。そうすると、印刷処理回路１５が、メモリインタフェース３１を介して、カートリッジＥＥＰＲＯＭ２１からデータを読出したり、カートリッジＥＥＰＲＯＭ２１にデータを書込んだりすることが可能になる。
【００２９】一般に、インクカートリッジのタイプには、キャリッジ上に印刷ヘッドと共に搭載されるオンキャリッジタイプと、キャリッジから離れた不動の場所にセットされるオフキャリッジタイプとがあるが、本実施形態のインクカートリッジ１９はどちらのタイプであってもよい。また、インクカートリッジ１９は、あるプリンタに装着して或る程度使った後、取り外して別のプリンタに再装着するというように、複数のプリンタに使い回すことも可能である。
【００３０】以下、上述のプリントシステムにおける印刷処理回路１５が行う処理の流れを説明する。
【００３１】図3は、インクカートリッジ１９の装着時に実行する印刷処理回路１５の処理の流れを示す。
【００３２】印刷処理回路１５は、インクカートリッジ１９が装着された時、又は、プリンタ５の電源がターンオンされた時は、カートリッジＥＥＰＲＯＭ２１に記録されているデータを読みだし（ステップＳ１）、購入済みデータの有無をチェックする（Ｓ２）。このチェックにおいて、購入済みデータがあれば（Ｓ２でＹｅｓ）、インクカートリッジ１９内のインクを印刷ヘッドに充填する等の所定の処理を開始し（Ｓ３）、購入済みデータが無ければ（Ｓ２でＮｏ）、印刷実行しない旨のメッセージ（例えば「購入した旨の記録が無いため印刷処理を開始できません！購入した小売店に御問合せ下さい。」）をホスト装置１のディスプレイに表示し、インクカートリッジ１９を使用して印刷しないようにする（Ｓ４）。
【００３３】購入済みデータがあることを確認した後は、印刷処理回路１５は、所定のタイミングでカートリッジＥＥＰＲＯＭ２１からサービス提供データを読出し、そのデータに基づいて所定の処理を実行する。例えば、読出したサービス提供データが、その小売店で購入した消費者のみが知ることができるＷｅｂページのＵＲＬである場合には、図４に示すような画面をホスト装置１のディスプレイに表示するようにする。消費者は、そのＵＲＬにアクセスすれば、小売店独自の情報及びサービスを受けることができる。
【００３４】以上が、本実施形態の説明である。なお、データ書込み装置４７及びプリンタ５と、カートリッジＥＥＰＲＯＭ２１とのデータ通信（つまりカートリッジＥＥＰＲＯＭ２１に対するデータの読出し及び書込み）は、電磁誘導を用いた非接触に限らず種々の方法（例えば発光素子と受光素子とを用いた光通信）で可能である。
【００３５】上述した実施形態によれば、各小売店４０ａ、４０ｂ、…において、正当にインクカートリッジ１９が購入されたときに、パッケージ５０の外から非接触でカートリッジＥＥＰＲＯＭ２１にアクセスして、インクカートリッジ１９の購入済みデータを書込むことができる。インクカートリッジ１９が装着されたプリンタ５は、カートリッジＥＥＰＲＭ２１に購入済みデータが記録されていなければ、インクカートリッジ１９を使用した印刷処理を実行しない。これにより、たとえインクカートリッジ１９を万引きして使用しても、万引きしたインクカートリッジ１９には購入済みデータが記録されていないので、プリンタ５は動作しない。つまり、万引きしたインクカートリッジ１９は使用することができないので、インクカートリッジ１９の万引き防止を図ることができる。

【００３６】また、上述した実施形態によれば、インクカートリッジ１９が製造されてから消費者にの手に渡るまでの流通経路上で、カートリッジＥＥＰＲＯＭ２１に所望のカスタマイズをすることができる。例えば各小売店４０ａ、４０ｂ、…では、独自のサービス提供データをカートリッジＥＥＰＲＯＭ２１に書込むことができる。これにより、小売店４０ａ、４０ｂ、…は、その小売店４０ａ、４０ｂ、…でインクカートリッジ１９を購入した消費者に利益や利便を与えると共に、その小売店４０ａ、４０ｂ、…の特徴等をアピールすることができる。また、インクカートリッジ１９のメーカーは、複数の機種や複数の仕向け先用のインクカートリッジを全て同じハードウェア構成で製造して、それを卸したり販売したりするときに、機種毎や仕向け先毎に適した内容の情報をカートリッジＥＥＰＲＯＭに書込んで販売することができる。

【００３７】次に、本発明の第二の実施形態について説明する。本実施形態では、第一の実施形態と異なる点を中心に説明する。本実施形態では、インクカートリッジの製造元から小売店まで流通する間で、カートリッジＥＥＰＲＯＭ２１へ様々な情報を書き込み、それをプリントシステムが利用する場合について示す。本実施形態は、特に、インクカートリッジを製造する者と販売する者とが異なる場合に好適である。たとえば、製造者が他のメーカへ供給し、供給を受けたメーカが自社ブランドで販売する、いわゆるＯＥＭの場合、またはある国で製造し、他の国の現地法人がそれを販売する場合等である。ここでは、ＯＥＭの場合、または複数の海外の現地法人がそれぞれ販売する場合を例にとり説明する。

【００３８】図６は、本発明の第二の実施形態に係るインクカートリッジと、ＯＥＭまたは海外の現地法人（または、ＯＥＭ供給先）を介した流通経路の例を示す。

【００３９】本実施形態では、内部に収容されたインクの蒸発防止、および不慮の事故等によりインクカートリッジからインクが漏れだした場合の汚染防止のため、インクカートリッジ１９は密封してパッケージされている。また、内部に収容されているインクが脱気されている場合、使用を開始する前にインクカートリッジ内のインクに空気が溶け込み、脱気度が低下しないように減圧梱包されている。インクカートリッジの減圧梱包について、図７を用いて説明する。この梱包に用いる梱包材としては、空気を遮断する性質のフィルムにより形成された袋６０が用いられる。図７（ａ）に示すように、インクカートリッジ１９はこの袋６０に収容される。開口６０ａから袋６０内の空気が吸い出され、減圧された状態で熱圧着等により開口６０ａが塞がれ、減圧梱包される。開口６０ａを塞いだ後、図７（ｂ）に示すように残部６０ｂは折り畳んでもよい。

【００４０】カートリッジＥＥＰＲＯＭ２１は、第１の実施形態と同様に、外部から非接触でアクセス可能である。すなわち、インクカートリッジが減圧梱包された状態で、外部からカートリッジＥＥＰＲＯＭ２１へ種々の情報を読み書きすることができる。カートリッジＥＥＰＲＯＭ２１が光学的読み書き方式の場合は、図８に示すように、袋６０に透明窓６０ｃを設け、この透明窓６０ｃを介し、カートリッジ１９にアクセスしデータ読出し及び書込みをするようにすればよい。

【００４１】ここでカートリッジＥＥＰＲＯＭ２１へ書き込む情報としては、たとえば、各現地法人を識別するための情報である現法ＩＤ、インクカートリッジ１９が使用可能なプリンタの機種を識別するための情報である機種ＩＤ、メンテナンス時の動作条件であるプリンタヘッドのクリーニングの制御条件、またはプリンタヘッドの駆動条件等である。プリンタヘッドのクリーニング時の制御条件とは、たとえば、クリーニングに吸引するインク量、または定期的に自動クリーニングを行う場合のインターバル等である。プリンタヘッドの駆動条件とは、１ドットを印刷するときに吐出するインク量等である。クリーニング制御条件、またはヘッドの駆動条件は、インクカートリッジ１９が販売される国または地域の気候（たとえば、気温、湿度、降水量等の平均値、最高値または最低値等）に応じて定めることができる。

【００４２】また、ＯＥＭの場合には、ＯＥＭとして供給する相手の会社等を識別するための情報である供給先ＩＤをカートリッジＥＥＰＲＯＭ２１へ書き込む。

【００４３】第１の実施形態と同様に、カートリッジＥＥＰＲＯＭ２１に書き込まれたデータに基づいて、図２に示すプリントシステムが動作する。本実施形態で印刷処理回路１５が行う処理の流れを、カートリッジＥＥＰＲＯＭ２１に書き込まれたデータ別に、図９～図１２を用いて説明する。

【００４４】図９は、プリンタの機種ＩＤがカートリッジＥＥＰＲＯＭ２１に書き込まれている場合の処理手順の例である。このとき、プリンタＥＥＰＲＯＭ１７には、プリンタ５の機種ＩＤが予め記憶されている。

【００４５】印刷処理回路１５は、インクカートリッジ１９が装着された時、又は、プリンタ５の電源がターンオンされた時は、カートリッジＥＥＰＲＯＭ２１に記録されているデータを読みだす（Ｓ１１）。印刷処理回路１５は、予めプリンタＥＥＰＲＯＭ１７に記憶されているプリンタ５の機種ＩＤを読み出し、カートリッジＥＥＰＲＯＭ２１から読み出した機種ＩＤと一致するかどうかをチェックする（Ｓ１２）。このチェックにおいて、機種ＩＤが一致すれば（Ｓ１２でＹｅｓ）、インクカートリッジ１９内のインクを印刷ヘッドに充填する等の所定の処理を開始し（Ｓ１３）、一致しなければ（Ｓ１２でＮｏ）、印刷実行しない旨のメッセージ（例えば「このインクカートリッジは、この機種のプリンタでは使用できません。」）をホスト装置１のディスプレイに表示し、インクカートリッジ１９を使用して印刷しないよう

にする（Ｓ１４）。これにより、インクカートリッジを、予め定められた機種以外のプリンタでは使用することができないようにできる。

【００４６】図１０は、ＯＥＭの供給先ＩＤ（または現法ＩＤ）がカートリッジＥＥＰＲＯＭ２１に書き込まれている場合の処理手順の例である。このとき、プリンタＥＥＰＲＯＭ１７には、プリンタ５と対応する供給先ＩＤ（または現法ＩＤ）が予め記憶されている。

【００４７】印刷処理回路１５は、インクカートリッジ１９が装着された時、又は、プリンタ５の電源がターンオンされた時は、カートリッジＥＥＰＲＯＭ２１に記録されているデータを読みだす（Ｓ２１）。印刷処理回路１５は、プリンタＥＥＰＲＯＭ１７に予め記憶されている供給先ＩＤ（または現法ＩＤ）を読み出し、カートリッジＥＥＰＲＯＭ２１から読み出した供給先ＩＤ（または現法ＩＤ）と一致するかどうかをチェックする（Ｓ１２）。このチェックにおいて、供給先ＩＤ（または現法ＩＤ）が一致すれば（Ｓ２２でＹｅｓ）、インクカートリッジ１９内のインクを印刷ヘッドに充填する等の所定の処理を開始し（Ｓ２３）、一致しなければ（Ｓ２２でＮｏ）、印刷実行しない旨のメッセージ（例えば「このインクカートリッジは、この機種のプリンタでは使用できません。」）をホスト装置１のディスプレイに表示し、インクカートリッジ１９を使用して印刷しないようにする（Ｓ２４）。これにより、予め定められたＯＥＭ供給先（または現地法人）が販売したインクカートリッジだけ、使用可能とすることができる。

【００４８】図１１は、クリーニング制御条件がカートリッジＥＥＰＲＯＭ２１に書き込まれている場合の処理手順の例である。

【００４９】図１１に示すように、印刷処理回路１５がユーザからのクリーニング要求を受け付けた時は、カートリッジＥＥＰＲＯＭ２１に記録されているデータを読みだす（Ｓ３１）。印刷処理回路１５は、読み出したクリーニング制御条件を解析し、これに基づいてクリーニング条件（たとえば、吸引するインク量）を設定し（Ｓ３２）、その条件に従ってクリーニングを実行する（Ｓ３３）。

【００５０】図１２は、クリーニング制御条件（または、印刷条件）がカートリッジＥＥＰＲＯＭ２１に書き込まれている場合の、インクカートリッジ１９の装着時、またはプリンタ５の電源ターンオン時の処理である。

【００５１】印刷処理回路１５は、インクカートリッジ１９が装着された時、又は、プリンタ５の電源がターンオンされた時は、カートリッジＥＥＰＲＯＭ２１に記録されているデータを読みだす（Ｓ４１）。印刷処理回路１５は、読み出したクリーニング制御条件（または、印刷制御条件）を解析し、これに基づいてクリーニングのインターバル（または、印刷条件）を設定する（Ｓ４２）。これ以降の定期的な自動クリーニング（または、印刷）は、ここで定めた条件に従って行われる。

【００５２】これにより、カートリッジＥＥＰＲＯＭ２１に記憶された制御情報を用いて、クリーニング条件、印刷制御条件等のプリンタの動作条件を設定することができる。この結果、インクカートリッジごとに様々な条件を設定できるので、インクカートリッジを販売する者、または販売される地域に固有の事情（プリンタの使用方法の違い、気候の違い等）を反映させることができる。

【００５３】第一および第二の実施形態において、カートリッジＥＥＰＲＯＭ２１に、インクカートリッジ１９の流通過程において使用される物流情報を書き込んでもよい。物流情報は、例えば、どの配送基地を経由して配送されるかを示す配送経路、各配送基地を通過した日時等、物流過程において必要な情報である。

【００５４】さらに、第一および第二の実施形態において、カートリッジＥＥＰＲＯＭ２１は、記憶領域が複数の領域に分割されていてもよい。そして、それぞれの制御情報ごとに各記憶領域を分けて使用してもよいし、図１３に示すように、製造元が書き込む領域２１１と、現地法人（またはＯＥＭ供給先）が書き込む領域２１２と、小売店が書き込む領域２１３と、プリンタ５が書き込む領域２１４とに別けてもよい。現地法人（またはＯＥＭ供給先）が書き込む領域２１２、および小売店が書き込む領域２１３は、流通経路において使用される領域である。製造元、現地法人（またはＯＥＭ供給先）、小売店およびプリンタ５は、それぞれ、全領域２１１、２１２、２１３、２１４を読み出すことができる。プリンタ５が書き込む領域２１４は、インク残量を示す情報が格納されている。プリンタ５は、インクを消費するたびに、その情報を随時更新する。

【００５５】以上、本発明の好適な実施形態を説明したが、これは本発明の説明のための例示であって、本発明の範囲をこの実施形態にのみ限定する趣旨ではない。本発明は、他の種々の形態でも実施することが可能である。つまり、本発明は、インクカートリッジ１９に限らず、プリンタ５の機器本体や、他の消耗品等に対しても適用することができる。

【００５６】例えば、図５に示すように、プリンタ５の印刷用紙がロール紙７５である場合には、ロール紙ケース７７の表面に、ＥＥＰＲＯＭ（以下、ロール紙ＥＥＰＲＯＭ）７１と、電磁誘導によりロール紙ＥＥＰＲＯＭ７１にアクセスするためのコイル７３とを備え、出荷時にロール紙７５を収納するパッケージには、そのパッケージに収納のしたままでもロール紙ＥＥＰＲＯＭ７１にアクセスできるように、コイル７３を覗ける透明窓を設ける。一方、プリンタ５には、ロール紙ホルダ（図示せず）に、ロール紙ＥＥＰＲＯＭ７１に対しデータ読出し／書込みするためのメモリインターフェースとコイルと

を備える。

【００５７】この実施形態において、小売店４０ａ、４０ｂ、…は、ロール紙７５が購入されたきは、データ書込み装置４７により、ロール紙７５のパッケージの外から非接触でロール紙ＥＥＰＲＯＭ７１にアクセスして、購入済みデータ等を書込む。

【００５８】そのロール紙７５が、プリンタ５のロール紙ホルダにセットされたときは、印刷処理回路１５が、ロール紙ホルダに備えられたメモリインターフェースにより、ロール紙ＥＥＰＲＯＭ７１からデータを読出し、購入済みデータが無い場合はこのロール紙７５を用いて印刷処理をしないようにする。

【図面の簡単な説明】

【図１】本発明の第一の実施形態に係るインクカートリッジとその流通経路の一例を示すブロック図。

【図２】本発明の第一の実施形態に係るプリントシステムの全体的な構成を示すブロック図。

【図３】インクカートリッジ１９の装着時に実行する印刷処理回路１５の処理の流れ図。

【図４】サービス提供データの表示画面。

【図５】ＥＥＰＲＯＭを搭載したプリンタロール紙の図。

【図６】本発明の第二の実施形態に係るインクカートリッジとその流通経路の一例を示すブロック図。

【図７】減圧梱包の手順および減圧梱包されたインクカートリッジ１９の図。

【図８】減圧梱包されたインクカートリッジ１９の図。

【図９】インクカートリッジ１９の装着時に実行する印刷処理回路１５の処理の流れ図。

【図１０】インクカートリッジ１９の装着時に実行する印刷処理回路１５の処理の流れ図。

【図１１】クリーニング要求時に実行する印刷処理回路１５の処理の流れ図。

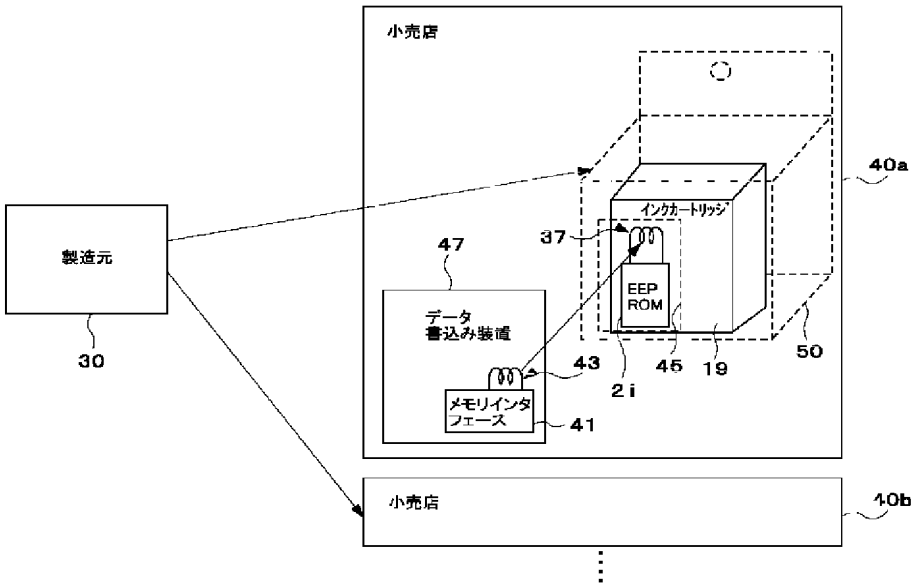
【図１２】インクカートリッジ１９の装着時に実行する印刷処理回路１５の処理の流れ図。

【図１３】複数の記憶領域に分割されたカートリッジＥＥＰＲＯＭ２１の図。

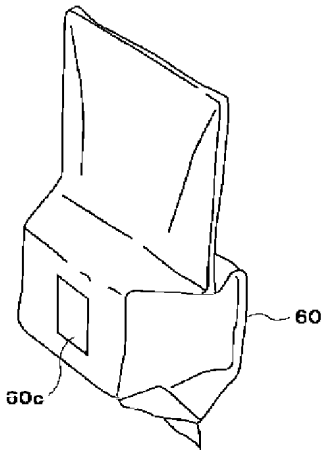
【符号の説明】

１　ホスト装置
３　プリンタインタフェース
５　インクジェットプリンタ
７　プリンタドライバ
１３　ホストインタフェース
１５　印刷処理回路
１７　ＥＥＰＲＯＭ（プリンタＥＥＰＲＯＭ）
１９　インクカートリッジ
２０　印刷機構
２１　ＥＥＰＲＯＭ（カートリッジＥＥＰＲＯＭ）
３０　製造元
３１、４１　メモリインタフェース
３５、３７、４３　コイル
４０ａ、４０ｂ、…　小売店
４５　透明窓
４７　データ書込み装置
５０　パッケージ
６０　袋

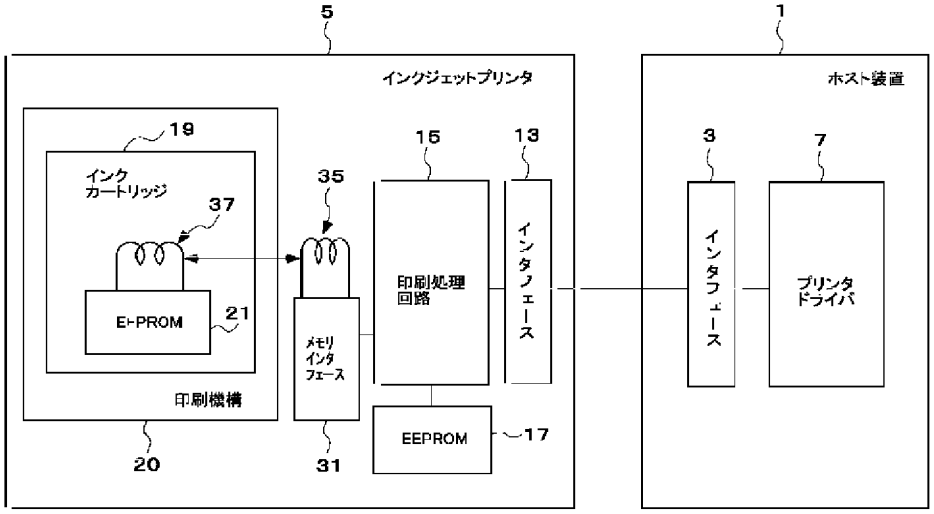
【図１】



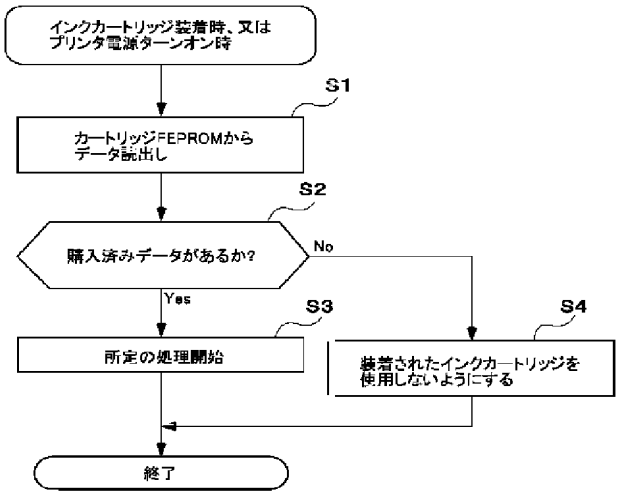
【図８】



【図2】


5
インクジェットプリンタ
19
インク
カートリッジ
37
E-PROM
21
印刷機構
20
35
メモリ
インタ
フェース
31
15
印刷処理
回路
13
インタフェース
EEPROM
17
1
ホスト装置
3
インタフェース
7
プリンタ
ドライバ

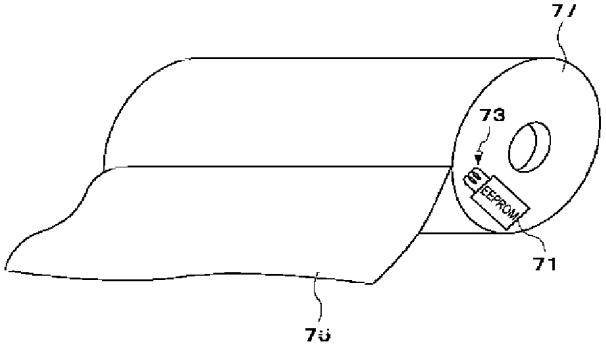
【図3】


インクカートリッジ装着時、又は
プリンタ電源ターンオン時
S1
カートリッジFEPROMから
データ読出し
S2
購入済みデータがあるか?
No
Yes
S3
所定の処理開始
S4
装着されたインクカートリッジを
使用しないようにする
終了

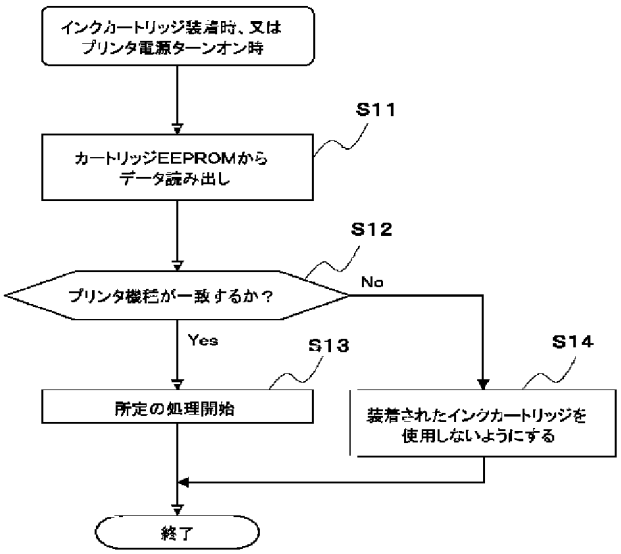
【図4】


当店をご利用頂きありがとうございます!
以下のURLにアクセスして下さい。当店をご利用
頂いたあなただけに送る情報とサービスが満載です。
http://www.himituservice.co.jp/

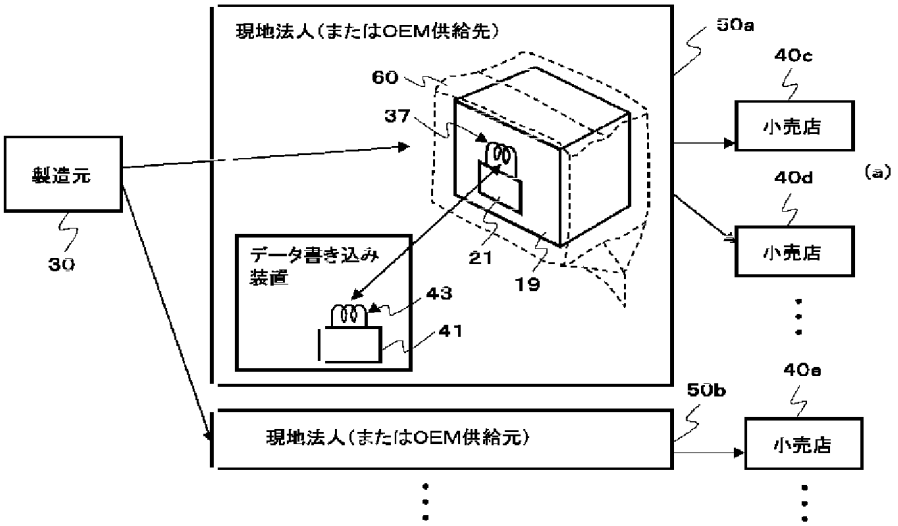
【図5】


77
73
EEPROM
71
75

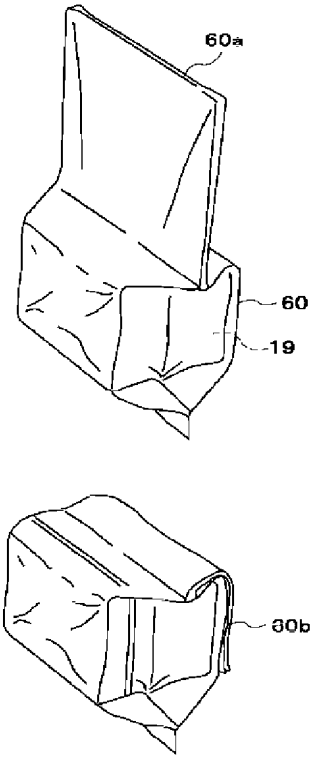
【図9】


インクカートリッジ装着時、又は
プリンタ電源ターンオン時
S11
カートリッジEEPROMから
データ読み出し
S12
プリンタ機種が一致するか?
No
Yes
S13
所定の処理開始
S14
装着されたインクカートリッジを
使用しないようにする
終了

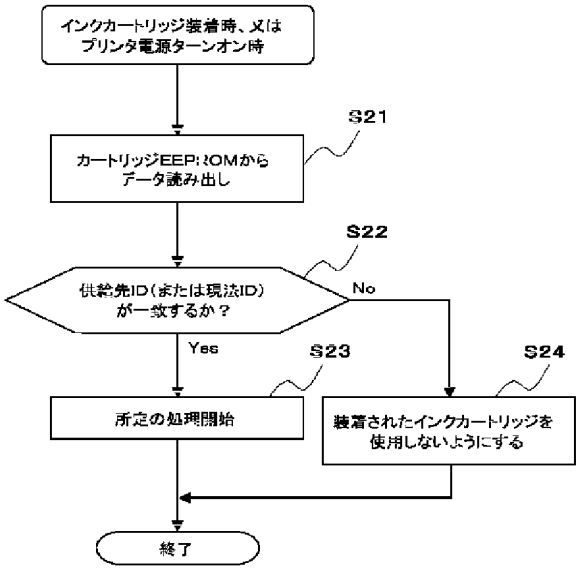
【図６】


現地法人(またはOEM供給先)
50a
40c
60
37
小売店
製造元
40d
小売店
30
データ書き込み
装置
21
19
43
41
40e
50b
現地法人(またはOEM供給元)
小売店

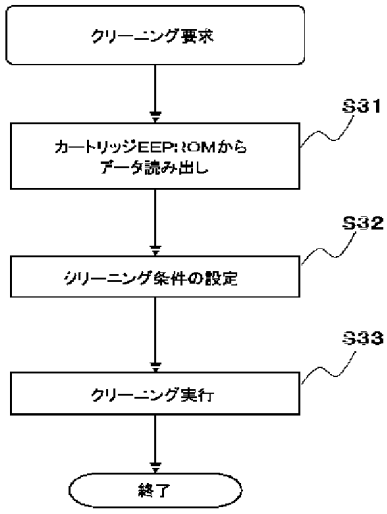
【図７】


60a
60
19
(a)
(b)
30b

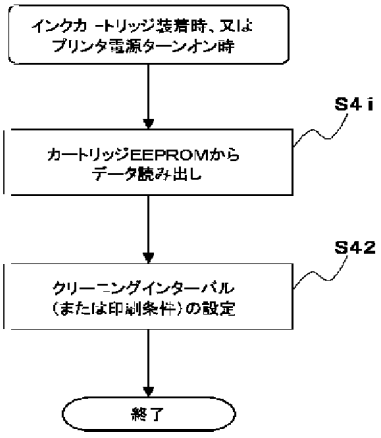
【図１０】


インクカートリッジ装着時、又は
プリンタ電源ターンオン時
S21
カートリッジEEPROMから
データ読み出し
S22
供給先ID(または現法ID)
が一致するか？
No
Yes
S23
S24
所定の処理開始
装着されたインクカートリッジを
使用しないようにする
終了

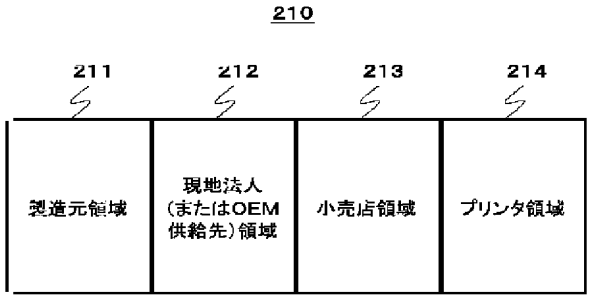
【図１１】


クリーニング要求
S31
カートリッジEEPROMから
データ読み出し
S32
クリーニング条件の設定
S33
クリーニング実行
終了

【図１２】



【図１３】



フロントページの続き

(51)Int.Cl.[7]	識別記号	ＦＩ		（参考）
Ｇ０６Ｋ　19/10		Ｇ０６Ｋ　19/00	Ｒ	